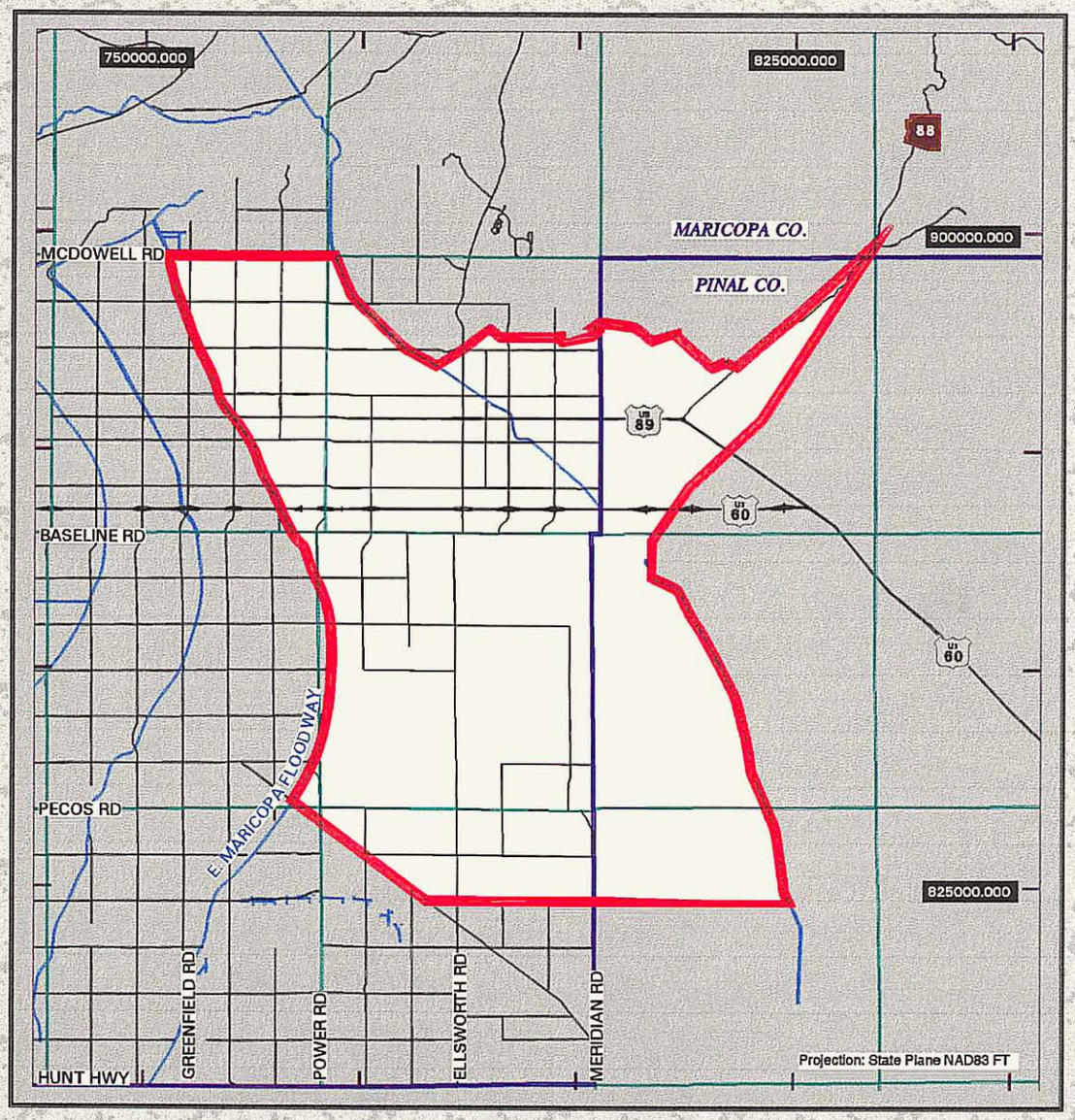
EAST MESA AREA DRAINAGE MASTER PLAN

HYDROLOGIC ANALYSIS

VOLUME 1 OF 2
OCTOBER, 1998



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
ENGINEERING DIVISION

FLOOD CONTROL DISTRICT of MARICOPA COUNTY

EAST MESA
AREA DRAINAGE MASTER PLAN

HYDROLOGIC ANALYSIS

October 1998

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Planning and Project Management Division
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East Mesa ADMP

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List of Project Personnel

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1.0 SYNOPSIS

This report presents the hydrologic analysis of the East Mesa Area Drainage Master Plan (ADMP) for the existing and future conditions. Future condition refers to a fully developed land use with stormwater retention policies enforced. Proposed future drainage facilities such as channels and regional basins are not considered since the facilities may change. The study area (Figures 1 and 2) covers approximately 36 square miles north of the Superstition Freeway (U.S. 60) and 85 square miles south of U.S. 60. Runoff flows from the northeast to the southwest for most of the study area. The southern area of the study flows in a more easterly to westerly direction. Within the study area stormwater flows from north of the Superstition Freeway passes under the freeway to the south at three locations where it joins with runoff from the south. It then discharges into the East Maricopa Floodway (EMF).

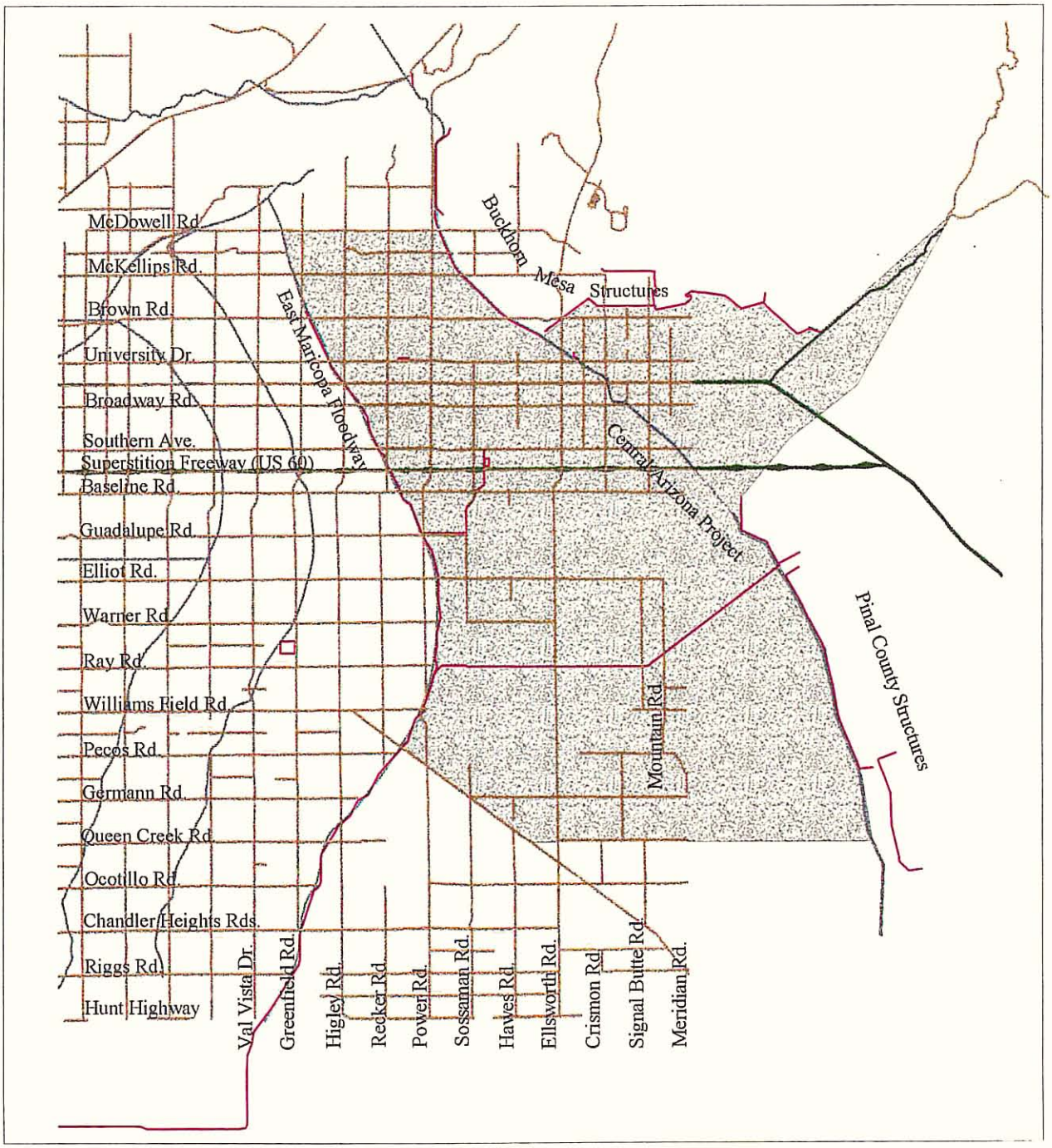
This hydrologic investigation provides an analytical tool for planning purposes, to alleviate flooding in order to provide better access for existing and future residents of the southeast valley area. By reducing the regional flooding, development in the area will also benefit by decreasing the cost for each development to build large pass-through corridors for offsite flows. This study presents hydrology for the East Mesa area based on the Flood Control District of Maricopa County's (FCDMC) hydrologic design criteria (FCDMC, 1995a).

The East Mesa ADMP is broken into three areas. Area I includes the area bounded on the north by the Superstition Freeway, on the east by the Central Arizona Project Canal (CAP), on the south by Queen Creek Road, and on the west by the EMF. Area II is bounded on the north by McDowell Road, on the northeast by the CAP, on the east by Hawes Road, on the south by Superstition Freeway, and on the west by the EMF. Area III includes the area bounded by the Buckhorn Mesa Flood Retarding structures owned by FCDMC on the north, the Weekes Wash watershed boundary on the east, the Superstition Freeway on the south, and Hawes Road on the west. See Figure 1.1.

Since this is a planning model, results should not be used for design without conducting a detailed investigation for the specific project.

The following tables summarize the peak discharges at selected locations resulting from the 100-, 50-, and 10-year 24-hour duration storms for existing and future conditions.

Figure 1.1
East Mesa ADMP
Study Area and Location Map



Flood Control District of Maricopa County Projects

East Mesa ADMP Area

N
W E
S

Table 1.1
Peak Discharge Flows for Existing Conditions

Location (ID)	100-yr, 24-hr Peak Q (cfs)	50-yr, 24-hr Peak Q (cfs)	10-yr, 24-hr Peak Q (cfs)
North of U.S. 60			
Hobart Rd inflows to the EMF (C8)	850	717	445
Power Rd at University Rd (C12)	922	810	559
Recker Rd at University Rd (C13B)	877	651	243
University Rd inflows to the EMF (C16)	640	608	556
Power Rd at Broadway Rd (C27)	849	744	540
Broadway Rd inflows to the EMF (C28)	1715	1458	958
Southern Ave at Power Rd (C34)	514	199	96
Southern Ave inflows to the EMF (C35)	252	146	90
Into ADOT Basins at Sossaman Rd and north of Superstition Freeway (C40)	919	805	547
US 60 collection channel inflows to EMF (C41)	500	426	281
Flows under US 60 just west of Meridian Rd (ADOT-E)	267	234	99
Flows under US 60 just west of Signal Butte Rd (C36B)	745	661	451
CAP Overchute 6 (RCAP6)	260	226	161
CAP Overchute 7 (RCAP7)	678	585	407
CAP Overchute 8 (RCAP8)	510	452	268
Crismon Rd at Southern Ave (C29C2)	1321	1146	719
CAP Overchute 9 (RCAP9)	126	106	61
Crismon Rd at US 60 (C36)	1813	1565	921
Inflows to ADOT Basin at Ellsworth Rd (C37)	2473	2065	1167
Outflows from ADOT Basin at Ellsworth Rd (ADOTEL)	17	17	16
CAP Overchute 3 (RCAP3A)	715	586	331
Apache Trail at Ellsworth Rd (C17B)	667	545	298
CAP Overchute 4 & 5 (RCAP4)	884	703	351
Broadway Rd at Glenmar Rd. (C23)	1157	916	511

Table 1.1
Peak Discharge Flows for Existing Conditions
(continued)

Location (ID)	100-yr, 24-hr Peak Q (cfs)	50-yr, 24-hr Peak Q (cfs)	10-yr, 24-hr Peak Q (cfs)
North of U.S. 60			
CAP Overchute 2 (RCAP2)	675	552	325
CAP Overchute 1 (RCAP1)	268	217	101
Broadway Rd at Hawes Rd (C24)	2356	1972	1185
Hawes Rd At Southern Ave (C31)	2455	2057	1128
Hawes Rd at US 60 (C38)	1214	1042	709
Inflows to Sossaman Basin (C39)	2558	2095	997
US 60, into southern portion of Phase I (SOSS)	1800	1800	997
South of U.S. 60			
Elliot Rd at Sossaman Rd (CP63)	1204	960	477
Ellsworth Rd, north of Elliot Rd (CP67E)	1085	887	556
Sossaman Rd at Warner Rd (CP71)	1857	1478	773
Ellsworth Rd at Elliot Rd (CP66)	2268	1826	1253
Signal Butte Rd, south of Ray Rd (CP74C)	1203	1003	528
Powerline Floodway at Ellsworth (CP75)	1444	1183	637
Meridian Rd at Pecos Rd (C78D2)	2782	2239	1092
Perimeter Channel West of Ellsworth Rd (C79)	3657	2913	1501
Flow in Powerline floodway, north of Williams Gateway (CPPWR)	4713	3839	1917
Queen Creek Rd at Ellsworth Rd (C89)	727	592	269
Germann Rd at Rittenhouse Rd (C86)	806	618	219
Rittenhouse Rd at Pecos Rd (CP91)	1434	1247	504
Rittenhouse Channel into EMF (RITTEN)	2438	1974	1019

Table 1.2
Peak Discharge Flows for Future Conditions

Location (ID)	100-yr, 24-hr Peak Q (cfs)	50-yr, 24-hr Peak Q (cfs)	10-yr, 24-hr Peak Q (cfs)
North of U.S. 60			
Hobart Rd inflows to the EMF (C8)	1148	623	262
Power Rd at University Rd (C12)	1155	1112	545
Recker Rd at University Rd (C13B)	952	851	106
University Rd inflows to the EMF (C16)	1307	701	377
Power Rd at Broadway Rd (C27)	1110	670	350
Broadway Rd inflows to the EMF (C28)	1806	1335	767
Southern Ave at Power Rd (C34)	208	125	91
Southern Ave inflows to the EMF (C35)	194	118	85
Inflows to ADOT Basins at Sossaman Rd and north of Superstition Freeway (C40)	584	995	657
US 60 collection channel inflows to EMF (C41)	604	367	205
Flows under US 60 just west of Meridian Rd (ADOT-E)	248	183	15
Flows under US 60 just west of Signal Butte Rd (C36B)	445	371	292
CAP Overchute 6 (RCAP6)	285	251	187
CAP Overchute 7 (RCAP7)	522	360	0
CAP Overchute 8 (RCAP8)	461	398	189
Crismon Rd at Southern Ave (C29C2)	787	540	215
CAP Overchute 9 (RCAP9)	38	6	0
Crismon Rd at US 60 (C36)	1177	851	222
Inflows to ADOT Basin at Ellsworth Rd (C37)	1634	1197	640
Outflows from ADOT Basin at Ellsworth Rd (ADOTEL)	17	17	16
CAP Overchute 3 (RCAP3A)	529	402	6
Apache Trail at Ellsworth Rd (C17B)	415	275	181
CAP Overchute 4 & 5 (RCAP4)	416	220	0
Broadway Rd at Glenmar Rd. (C23)	1090	850	354

Table 1.2
Peak Discharge Flow for Future Conditions
(continued)

Location (ID)	100-yr, 24-hr Peak Q (cfs)	50-yr, 24-hr Peak Q (cfs)	10-yr, 24-hr Peak Q (cfs)
North of U.S. 60 (continued)			
CAP Overchute 2 (RCAP2)	524	385	17
CAP Overchute 1 (RCAP1)	227	152	19
Broadway Rd at Hawes Rd (C24)	2194	1867	811
Hawes Rd At Southern Ave (C31)	2421	1880	580
Hawes Rd at US 60 (C38)	1088	881	473
Inflows to Sossaman Basin (C39)	2312	1710	711
US 60, into southern portion of Phase I (SOSS)	1800	1710	711
South of U.S. 60			
Elliot Rd at Sossaman Rd (CP63)	633	402	21
Ellsworth Rd, north of Elliot Rd (CP67E)	680	569	301
Sossaman Rd at Warner Rd (CP71)	967	733	301
Ellsworth Rd at Elliot Rd (CP66)	1138	1014	767
Signal Butte Rd, south of Ray Rd (CP74C)	478	389	188
Powerline Floodway at Ellsworth (CP75)	1468	1206	624
Meridian Rd at Pecos Rd (C78D2)	2808	2133	1006
Perimeter Channel West of Ellsworth Rd (C79)	3480	2634	1288
Flow in Powerline floodway, north of Williams Gateway (CPPWR)	4539	3569	1778
Queen Creek Rd at Ellsworth Rd (C89)	578	296	7
Germann Rd at Rittenhouse Rd (C86)	505	167	0
Rittenhouse Rd at Pecos Rd (CP91)	966	547	195
Rittenhouse Channel into EMF (RITTEN)	2321	1756	901

2.0 INTRODUCTION

The Hydrology Branch, Engineering Division of the FCDMC developed the East Mesa ADMP hydrologic analysis for the existing and future conditions for the Planning Branch of the Planning and Project Management Division (PPM) of the FCDMC. Previous hydrologic investigations and ongoing construction activities within the study area are incorporated into the computer model where applicable.

This report presents the results of the hydrologic investigation for East Mesa based on the FCDMC hydrologic design criteria, and anticipated increased urbanization. This report also documents the assumptions and methodologies used in the hydrologic investigation.

3.0 STUDY PARAMETER

3.1 Study Area

The East Mesa ADMP has an area of approximately 121 square miles. The Central Arizona Project (CAP) canal bounds the study area on the north, FCDMC Structures on the east (Powerline FRS, Vineyard FRS and Rittenhouse FRS), Queen Creek Road on the south and the East Maricopa Floodway (EMF) on the west (Figure 1.1). The study area covers portions of the City of Mesa, the Town of Gilbert, the Town of Queen Creek, and a large portion of unincorporated Maricopa and Pinal Counties (See Plate 1 & 2 in Appendix A).

Runoff generally flows from the northeast to the southwest in this watershed. Runoff consists of sheet flows and concentration in shallow washes. There are a number of flood control structures in the study area which intercept flows and divert them out of the study area (see Plates 11 and 12, in Appendix A). Sossaman Channel carries flows from north of the Superstition Freeway into the southern portion of the study area, as well as local flows that it intercepts, discharging them into the Guadalupe Channel. The Guadalupe Channel accepts local flows from north of Guadalupe Road and west of Ellsworth Road and discharges into the EMF. The EMF intercepts flows from the northeast and relays them to Queen Creek and subsequently the Gila River. The Powerline Floodway, a concrete lined channel, conveys flows from the Pinal County flood control structures (east of the CAP) to the EMF. The floodway runs from the northeast to the southwest until it reaches the Ray Road alignment, where it runs from the east to the west until it discharges into the EMF. This floodway intercepts local flows, conveying them to its outlet at the EMF.

3.2 Mapping

3.2.1 Maps

The available mapping includes:

1. **USGS Quadrangle Maps**: Apache Junction, Desert Well, Buckhorn, and Higley, Arizona, 7.5 minute series topographic maps. The map scale is 1 inch = 2000 feet with a contour interval of 10 feet. The maps, photo-revised in 1973 and 1982, are used to aid in the establishment of the subbasin drainage boundaries, flow patterns, and elevations for slope calculations (USGS, various dates).

2. **Landiscor Aerial Photos:** Photo scale is 1 inch = 1200 feet and the photos were taken in October 1994. Updated photos from January 1995 and February 1996 are used in the subbasin breakdown for the ADMP. These aerial photos provide land use information to assist in the determination of subbasin boundaries and for general reference (Landiscor, 1994).

3. **Construction Plans:** Construction plans for structures associated with Powerline Floodway (USDA, 1966) and Guadalupe Channel (FCDMC, 1990a), and the East Maricopa Floodway (USDA, 1986a) provide information for routing purposes.

4. **Queen Creek ADMS Topographic Mapping:** Map scale is 1 inch = 200 feet, with two foot contour intervals. The mapping aids in the establishment of the subbasin drainage boundaries, flow patterns, and elevations for slope calculations (Wood and Associates, 1991).

5. **Central Arizona Project Overchutes:** Map scale is 1 inch = 400 feet with 2 foot contour intervals. The mapping helps to develop stage-storage relationships for overchutes crossing the CAP (Aerial Mapping Company, 1996).

3.2.2 Survey Notes

Franzoy Corey surveys of Williams Air Force Base (WAFB) provide cross section and slope information for the perimeter channels (Franzoy Corey, 1988).

3.2.3 Watershed Maps

These maps are the starting point for subbasin drainage delineations, flow patterns, and major concentration points.

1. East Maricopa County ADMS (EADMS14) (FCDMC, 1990b);
2. Queen Creek ADMS (Wood and Associates, 1991);

3. Final Report: A Study for Rehabilitation and Maintenance of the Drainage System at Williams Air Force Base, Arizona Report (Franzoy Corey, 1988).

3.2.4 Community Maps

City and town boundaries, also known as corporate limits, have been digitized into a Geographic Information System (GIS) from City Limits Maps generated by the Maricopa County Department of Transportation (MCDOT) (scale 1 inch = 1.28 miles), assessor maps, plat maps and city quarter section maps (Plates 1 and 2, in Appendix A). The street names and centerlines are imported from MCDOT ARC/INFO digital files. County boundaries have been digitized by the Arizona State Land Department.

3.3 Study Criteria

The following criteria and guidelines were set forth by the Hydrology Branch prior to and during the drainage study:

1. Calculate hydrology for the 100-, 50- and 10-year storm frequencies;
2. Investigate a 24-hour storm duration;
3. Use the U.S. Army Corps of Engineers (COE) HEC-1 computer program (Version 4.0, September 1990) (USCOE 1990) for hydrograph computations;
4. Use the S-graph method to generate subbasin unit hydrographs via the Maricopa County Unit Hydrograph Procedure Number 2 (MCUHP2) computer program within the Drainage Design Menu System Version 1.0 (DDMS) (FCDMC, 1995b).

4.0 HYDROLOGY

4.1 General

The hydrology for the East Mesa watershed is analyzed under existing conditions for the 100-, 50- and 10-year storms.. A storm duration of 24 hours is evaluated for these storm frequencies. When compared to the 6-hour duration, the 24-hour duration is the critical storm generating higher peak flows. The East Mesa watershed is modeled using the Corps of Engineers HEC-1 computer program (Version 4.0, September 1990).

The S-graph method represents runoff characteristics for the watershed and converts them to a Unit-graph using the FCDMC's MCUHP2 program, for input into the HEC-1 model for each subbasin. The entire watershed is divided into subbasins. The SCS Type II rainfall pattern is used to determine the temporal distribution for the 100-, 50- and 10-year 24-hour events. The NOAA Technical Memorandum NWS HYDRO-40 (NOAA, 1984) is used to calculate the areal reduction factors for the rainfall. Point rainfall depths are reduced based on the contributing area.

The Southeast Mesa ADMS, the previous hydrologic study of this area, was conducted by the Flood Control District of Maricopa County (FCDMC, 1996). The northern boundary for this study is the Superstition Freeway. In order to address flooding problems to the north of the freeway, most notably on the north side of the CAP canal, the contributing watershed is expanded to include an additional 31 square miles, 15 square miles of which are north of the CAP. This area is included in the study since it contributes to runoff flowing through the CAP overchutes. The study area is subdivided into additional subbasins. This is done to obtain flows at more locations within the study area than can be obtained by the ADMS.

The Drainage Design Menu System Version 1.0 (DDMS) (FCDMC, 1995b) computer program brings together several programs currently used by FCDMC in conjunction with design hydrology using the methods in the Drainage Design Manual, Volume 1 Hydrology (Manual) (FCDMC, 1995a). The menu driven system facilitates the input and management of data used in the development of design hydrology. DDMS makes use of previously existing programs that have been recommended for use with the Manual, such as PREFRE, MCUHP1, MCUHP2, and HEC-1. Among the main improvements over the previous procedures is the new menu system that allows for easy creation of MCUHP input files and automatic merging of MCUHP output and HEC-1 data files.

4.2 Previous Hydrologic Investigations

Previous hydrologic investigations are reviewed for historical as well as hydrologic information that could be used in this analysis. Particular attention is given to subbasin delineation, reach routing methods, location of concentration points, treatment of detention basin areas, storm frequency and duration, and location of future drainage structures. A brief summary of previous investigations performed within the East Mesa watershed is presented below.

East Maricopa County Area Drainage Master Study (A-N West, 1987)
This study covers approximately 68 square miles. The study area is bounded by the Buckhorn-Mesa Flood Control Structures on the north; Northern Diversion and Powerline Floodway on the southeast and south; and the East Maricopa Floodway (EMF) on the west. This was the first area drainage master study developed for the District. The purpose of the study was to eventually develop a master plan for the area to reduce flooding problems identified in the study.

East Maricopa County Area Drainage Master Study (FCDMC, 1990b)
This study revised the A-N West study to correct problems with the model. This study created a high-resolution model to predict peak discharges at many strategic locations.

Southeast Mesa Area Drainage Master Study (FCDMC, 1996)
This study covers approximately 73 square miles within Maricopa and Pinal counties. The Superstition Freeway bounds the study area to the north, the CAP to the east, Queen Creek Road to the south, and the East Maricopa Floodway to the west. This study provides an analytical tool for planning and evaluates localized flooding in order to provide better access for existing and future residents of the southeast valley.

Queen Creek Area Drainage Master Study (Wood and Associates, 1991)
This study covers approximately 70 square miles within Maricopa County. The total contributing watershed is approximately 244 square miles. The Goldmine and San Tan Mountains bound the study area on the south, the EMF on the west, the CAP on the east, and approximately the Powerline Floodway on the north. This study identifies existing stormwater flooding problems within the area.

Rittenhouse Road Channel (Gannet Fleming, 1993)
This study covers approximately 23 square miles within Maricopa County. The General Motors Proving Grounds and Williams Gateway Airport bound .the study area to the north, the CAP to the east, the Southern Pacific Railroad to the south, and the EMF to the west. This study is a revised section of the Queen Creek ADMS. Existing detention areas and culverts are added to the Queen Creek ADMS to better depict runoff from particular subbasins. This is done to properly design the Rittenhouse Road Channel.

4.3 Parameter Estimation-Existing Conditions

4.3.1 Drainage Area Boundaries

The East Mesa area as presented in the East Maricopa County ADMS (FCDMC, 1990b), Southeast Mesa ADMS (FCDMD, 1996), and the Queen Creek ADMS (Wood and Associates, 1991) serve as foundations for subbasin delineations. When subbasins need to be broken down into smaller areas for better flow definition, USGS topographic quadrangle maps (USGS, various dates) and aerial photos (Landiscor, 1994) are utilized for subbasin boundary definition. The delineation is then supplemented by field investigations in the area.

4.3.2 Rainfall Parameters

The existing conditions hydrology for the East Mesa watershed is analyzed for the 100-, 50- and 10-year, 24-hour duration storm. The 24-hour duration results in greater peak flows than the 6-hour duration storm. The 100-, 50- and 10-year point rainfall depths are selected from the isopluvial maps found in the Drainage Design Manual, Volume I, which come from the NOAA Precipitation-Frequency Atlas for Arizona (NOAA, 1973). Point rainfall reduction based on

contributing area is used to convert point rainfall to an equivalent uniform depth of rainfall over the entire watershed. Table 4.1 shows the depth–areal reduction factors for the 24-hour duration rainfall (FCDMC, 1995a). The point rainfall values can be found in Table 4.2.

The 100-yr 2-hr storm is applied to the model to determine the retention volumes. See Section 4.4 for details on retention calculation procedures.

Table 4.1
Depth-Area Reduction Factors for 24-Hour Duration Rainfalll
(FCDMC, 1995a)

Area (sq.mi.)	Ratio to Point Rainfall	Area (sq.mi.)	Ratio to Point Rainfall
0	1.00	100	0.842
10	0.94	110	0.838
20	0.91	120	0.834
30	0.90	130	0.833
40	0.88	140	0.829
50	0.87	150	0.825
60	0.86	200	0.817
70	0.856	300	0.800
80	0.855	400	0.790
90	0.846	500	0.780

Table 4.2
Precipitation Values

Storm	Point	Areal Reduction Precipitation Values (in)					
Frequency	Precip (in)	1 sq.mi	5 sq.mi.	10 sq.mi.	30 sq.mi.	60 sq.mi.	90 sq.mi.
100-yr, 24-hr	3.6	3.58	3.49	3.38	3.24	3.10	3.05
50-yr, 24-hr	3.2	3.18	3.10	3.00	2.88	2.75	2.71
10-yr, 24-hr	2.3	2.29	2.23	2.16	2.07	1.98	1.95
100-yr, 2-hr	2.6	na	na	na	na	na	na

4.3.3 Physical Parameters

4.3.3.1 Soils

The *Soil Survey of Eastern Maricopa and Northern Pinal Counties Areas, Arizona* (USDA, 1974) identifies the soil map units in each subbasin. The general soils map for this survey shows the soil associations in the Eastern Maricopa County and Northern Pinal County areas. These associations normally consist of one or more major soils and at least one minor soil, and are named for the major soils. The soils in one association may occur in another but in a different pattern.

The East Mesa watershed has the following soil associations:

1. Mohall-Contine association: Well-drained, nearly level loams, clay loams, and sandy clay loams on old alluvial fans.
2. Gilman-Estrella-Avondale association: Well-drained, nearly level loams and clay loams on alluvial fans and flood plains.

The texture mentioned in the name of each soil association refers to the dominant texture of the surface layers of the major soils in the given association. Each soil association has *soil series* which have characteristic profiles. The soil series are further subdivided into mapping units based on the dominant soil texture of the surface layer(s) in the series.

For this study, the SCS soil maps showing the soil mapping units for the entire watershed is digitized into the ARC/INFO GIS (Plates 7 and 8 in Appendix A). The areal distribution of each soil type is then calculated for each subbasin using the digital information in the GIS. The areal distribution for each subbasin can be found in the subbasin parameter tables in Appendix F.

4.3.3.2 Land Uses

Hydrologic parameters are determined by a land use classification. One of the most important hydrologic parameters is the impervious area, which is especially critical in the urban and suburban watersheds. Therefore, the classification scheme focuses on the differentiation of land use types according to impervious areas. The classification method utilizes a scheme based on simplified versions of municipal land use/zoning maps.

Starting with a table of representative percentages of impervious areas for City of Phoenix zoning classifications from the Cave Creek Flood Delineation Study (Burgess and Niple, Inc., 1990), six classes of land uses are created by grouping the zoning units according to their similarity in impervious areas. These classes are created to decrease the number of different units that needed to be mapped, digitized and otherwise accounted for in the hydrologic model. This level of generalization allows for differentiation between significantly different land uses

(and hence impervious areas) while still recognizing the limitations of a lumped parameter model such as HEC-1.

Table 4.3
Land Use Defaults

LandUse Type	DTHETA Condition	Veg Cover %	RTIMP %	IA (in)	Kn	Kb Roughness Type
Desert	Dry	25	0	.35	.03 or.09*	Low
Rural	Normal	30	5	.30	.05	Low
Large Lot Residential	Normal	50	15	.30	.05	Low
Small Lot Residential	Normal	50	30	.25	.05	Low
Med Density Residential	Normal	50	45	.25	.05	Low
High Density Residential	Normal	50	45	.25	.05	Low
Neighborhood Retail	Normal	75	80	.10	.02	Min
Community Retail	Normal	75	80	.10	.02	Min
Regional Retail	Normal	75	80	.10	.02	Min
Hotel	Normal	75	80	.10	.02	Min
Warehouse	Normal	75	80	.10	.02	Min
Industrial	Normal	60	55	.15	.03	Min
Business Park	Normal	75	80	.10	.02	Min
Office	Normal	75	80	.10	.02	Min
Education	Normal	80	45	.29	.05	Hi
Institution	Normal	75	80	.1	.02	Min
Public Facility	Normal	75	80	.10	.02	Min
Transportation	Normal	75	80	.10	.02	Min
Airport	Normal	60	55	.15	.03	Min
Recreational - open space	Normal	90	0	.10	.10	Hi
Water	Wet	0	0	0	1.0	Hi
Ag/Orch	Normal	90	0	.50	.10	Hi
Ag/Row	Normal	85	0	.5	.1	Hi
Vacant	Dry	10	0	.35	.09	Hi

* The Kn valued differed depending on the condition of the desert "pavement."

Once these impervious area classes are created for the City of Phoenix zoning types, zoning types for the other municipalities within the County are assigned to these classes based on their similarity to the City of Phoenix zoning types. In those cases where significantly different zoning types exist, judgement is used to place them in an impervious area class appropriate to that particular land use.

The Maricopa Association of Governments (MAG) regrouped the basic land uses categories to more specific land uses (MAG, 1996). These categories can be found in Table 4.3. The 1997 Land Use Maps created by MAG can be found in Plates 3 and 4 in Appendix A.

4.3.3.3 Lag Times

The S-graph method requires the estimation of the basin lag parameter. The following U.S. Army Corps of Engineers lag time equation (USCOE, 1990) is used to compute basin lag as a function of watershed characteristics:

$$Lag = 24\,Kn \left[\frac{L\,Lca}{S^{0.5}} \right]^{0.38}$$

where:

Lag	=	basin lag, in hours
L	=	length of the longest watercourse, in miles
L_{ca}	=	length along the watercourse to a point opposite the basin centroid, in miles
S	=	watercourse slope, in feet/mile
Kn	=	estimated mean Manning's roughness coefficient for all channels within a basin

The length of the longest watercourse within each subbasin and its corresponding slope is determined using the 7.5 minute USGS topographic quadrangles and from flow patterns observed from field investigations. The centroids and the L_{ca} lengths for each subbasin are determined using the USGS topographic quadrangles.

Kn values are selected based on the DDMS program with additional professional judgement applied. These values include the influence of basin characteristics that affect the lag time of the watershed. Kn values are higher than those used in other studies due to the characteristics of the study area, the higher Kn values allowed for more realistic lag times. Table 4.3 shows the data used by DDMS to select Kn values. Kn values and Lag time calculations used for the modeling process can be found in Tables F-3. F-6, and F-9 in Appendix F.

4.3.3.4 Loss Parameters

The Green and Ampt method is used to estimate rainfall losses. The procedures are outlined in the Drainage Design Manual, Volume I and the DDMS program (FCDMC, 1995a and 1995b). The Green and Ampt loss rate method in HEC-1 simulates rainfall losses as a two-phase process. In the first phase, no infiltration of rainfall occurs until the accumulated rainfall equals the initial loss (IA). The second phase is the infiltration of rainfall into the soil once IA has been satisfied. Use of the Green and Ampt method requires the estimation of five parameters for each subbasin: initial loss (IA), saturated hydraulic conductivity (XKSAT), volumetric soil moisture deficit (DTHETA), average wetting front suction (PSIF), and effective impervious area (RTIMP). The Soil Survey of Eastern Maricopa and Northern Pinal Counties, Arizona (USDA, 1974) is used to identify the soil map units in each subbasin. In areas of Pinal County where no soil surveys exist, a soil description of Mohall Loam is used. The soil maps for the entire study area are digitized into the ARC/INFO GIS and the areal distribution of each soil type is calculated in each subbasin using the digital information in the GIS. This information is used as input into the DDMS. For each map unit, DDMS assigns an XKSAT value using the soil survey descriptions

of the soil texture represented in the map unit (Appendix C of USDA, 1974). The DDMS then calculates an average bare ground XKSAT value for each individual subbasin by logarithmically averaging the XKSAT values for the map units within the subbasin based upon their areal distribution within that subbasin.

Once representative subbasin XKSAT values are calculated, DTHETA and PSIF values are assigned accordingly since both vary with respect to soil texture, and hence, XKSAT. Relationships between XKSAT, PSIF, and DTHETA are calculated by DDMS and are shown in Table 4.4.

The next step performed by DDMS involves the adjustment of DTHETA and the calculation of initial losses (IA) by identifying the land use distributions within each subbasin. For each land use category, DDMS assigns an initial loss value. The "Normal" DTHETA condition is computed by DDMS and is assumed for most land uses in the study with the exception of desert and open land, which are assumed to have "Dry" conditions.

The land use information and the consequent IA and DTHETA conditions are used to calculate areally weighted IA and DTHETA values for each subbasin. The vegetation cover is also areally weighted and the average value used to adjust the XKSAT. These calculations are conducted by DDMS.

In addition to IA, XKSAT, PSIF, and DTHETA, an effective impervious area (RTIMP) for each subbasin is estimated. Lumped values for total impervious areas are calculated for individual subbasins in the watershed based on the areal distributions of land uses provided by the GIS and the percent impervious area assigned. The results of the calculations for each subbasin can be found in Appendix F.

Table 4.4

Green and Ampt Loss Rate Parameter Values for Bare Ground

Soil Texture	XKSAT	PSIF	DTHETA		
			Dry	Normal	Saturated
Loamy sand & sand	1.2	2.1	0.35	0.30	0
Sandy loam	0.40	4.3	0.35	0.35	0
loam	0.25	3.5	0.35	0.25	0
Silty loam	0.15	6.6	0.40	0.25	0
silt	0.10	7.5	0.35	0.15	0
Sandy clay loam	0.06	8.6	0.25	0.15	0
Clay loam	0.04	8.2	0.25	0.15	0
Silty clay loam	0.04	10.8	0.30	0.15	0
Sandy clay	0.02	9.4	0.20	0.10	0
Silty clay	0.02	11.5	0.20	0.10	0
clay	0.01	12.4	0.15	0.05	0

4.3.4 Routing Parameters

The hydrologic routing procedures used are as follows:

Channel Routing: Channel routings are performed using the Normal-Depth option in HEC-1. A flow routing map illustrating where flows are routed throughout the study area can be found on Plates 9 and 10, Appendix A. the normal depth routing method allows the user to define a representative 8-point cross-section for the routing reach as well as overbank and main channel roughness values. The routings were categories into a number of channel configurations to allow for the ease for modeling. Categories include main streets, side streets, natural washes, and man-made channels.

4.3.4.1 Cross Sections

Channel cross section locations, elevations, and slopes are estimated using USGS topographic quadrangles (USGS, various dates), and observations made during field investigations.

4.3.4.2 Manning's Roughness Coefficients

Manning's roughness coefficients are determined in the field and from guidelines provided in the USGS' Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona (USGS, 1991).

4.3.4.3 Determination of NSTPS

Use of the Normal-Depth channel routing method in HEC-1 requires the estimation of the parameter NSTPS. For this study, the NSTPS are determined using the guidelines outlined in the HEC-1 User's Manual (USCOE, 1990) and then adjusted using professional judgement to obtain reasonable attenuations and translations of hydrographs.

4.3.5 Retention Values

The study area has 100-year 2-hour on-site retention requirements within its boundaries. Retention requirements for urban developments were established in the early 1970s. Prior to that time, no formal retention facilities were required. It is assumed that for the existing conditions model, there is no retention for the subbasins, with the exception of the north part the GMDPG and TRW and a number of newer developments that have larger retention basins. The larger developments were assumed to have an efficiency factor of 80% for the retention basins. This factor accounts for some roads and small drainage areas in the development that may not reach the retention basin.

4.4 Parameter Estimation - Future Conditions

Table 1.2 shows the flows for the future condition at strategic locations.

4.4.1 Drainage Area

The future condition study uses the existing condition drainage area boundaries.

4.4.2 Rainfall Parameters

The rainfall values are the same as described in section 4.3.2 for existing conditions. The precipitation values can be found in Table 4.2.

4.4.3 Physical Parameters

4.4.3.1 Soils

The soils are the same as described in section 4.3.3.1 and are displayed on Plates 7 and 8 in Appendix A. The areal distribution for each subbasin can be found in the subbasin parameter tables in Appendix G.

4.4.3.2 Land Uses

The future conditions impervious areas are based on future zoning ordinances for the watershed. The land use data is obtained from the Maricopa Association of Governments' Future Land Use Plan dated 1997.

The digital land use map was created by digitizing the information compiled from the zoning maps into the ARC/INFO GIS by MAG and given to the Hydrologic Information System Branch (HIS) (Plates 7 and 8 in Appendix A). The areal distribution of land uses in each subbasin is calculated by the GIS.

4.4.3.3 Lag Times

The lag times are determined as described in section 4.3.3.3. Although there will be some difference in the watercourse path for the future land use conditions, the exact path can not be determined, therefore, the existing lag time values are used for the future conditions. See Table 4.3 for Land Use Default Values.

4.4.3.4 Loss Parameters

The loss parameters are determined using the same procedures as described in section 4.3.3.4. The loss parameters are determined using the future land uses and increased impervious area. The DDMS is rerun with the new land uses to determine the new values. See Tables G-3, G-7, and G-11 in Appendix G for the loss parameter values for each subbasin.

4.4.4 Routing Parameters

The routing parameters for the future conditions will change from the existing conditions, but again it is difficult to determine what the values will be until a development or regional drainage feature is planned. Therefore, all the routing parameters such as cross-sections, Manning's roughness coefficients, and NSTPS are assumed to be the same as the existing conditions.

4.4.5 Retention Values

Retention requirements for the study area are based upon the 100-year 2-hour event. To obtain the required retention volume, the future condition model is executed with the 100-year 2-hour rainfall. This volume generated for each subbasin is then extracted and used as the maximum

volume that can be retained in each subbasin. Because many existing developments do not have sufficient retention, if any, the retention volume is adjusted to only reflect new developments and areas that retention can be verified. An estimate is based on the percent of future development availability in the existing land use map. Future development availability means any existing land use that is desert, agriculture or vacant. For example, if 40% of the subbasin still needs to be developed, then only 40% of the maximum volume obtained from the future conditions with the 100-year 2-hour rainfall will be retained for future conditions 100-year, 50-year, and 10-year rainfall. The resulting volume is then multiplied by an efficiency factor. Many developments do not account for the runoff generated from the main streets and half-mile street in their volume calculations. This accounts for about 10% of the area. The plan that 100% of the runoff generated by the development will enter the retention basin may not occur in actuality. This may account for another 10 % of the area. Therefore, the efficiency factor of 80% was used to account for the runoff that will not get to the retention basin.

The future condition model is based on MAG Future Land Use Plan. It is important to note that the area that is now occupied by GMDPG (Subbasins 75, 79A and 79B) consists of desert and industrial land uses. This area is assumed to remain the same for future conditions.

The area which was formerly occupied by Williams Air Force Base, which is now being managed by the Williams Gateway Airport Authority, is assumed to have a majority of parks and public land uses per MAG draft Future Land Use Plan. The Williams Gateway Airport Authority is currently developing a future land use plan for the area. They anticipate utilizing many of the existing facilities as a regional airport, university facilities including dormitories, a local high school, and housing for the homeless. The future condition model is adjusted accordingly.

The subbasins in Pinal County, south of the Superstition Freeway are assumed have the same land uses as the existing land uses with the exception of Subbasin 65A which is just south of the Superstition Freeway. Development is Subbasin 65A is already being planned. The other areas in Pinal County are not anticipating any significant growth for many years. Therefore, no retention is assumed in these areas.

4.5 Special Considerations

4.5.1 Non-Contributing Areas

In the existing condition model, the north part of GMDPG (Subbasin 75) is modeled to have only 25% of the area contributing as runoff. Based on an on-site visit and reviewing the drainage report for GMDPG (Aerial Mapping Company, 1996), it is evident that the majority of the runoff is retained on-site.

TRW has two retention basins on-site (Fluor Daniel, Inc., 1992). The cumulative volume (110.7 acre-feet) is assumed for both present and future conditions.

4.5.2 CAP Overchute Flows

The runoff flowing through the CAP overchutes north of the Superstition Freeway is analyzed by calculating the stage-storage relationships and determining the capacity of the overchutes. As-built plans from the Bureau of Reclamation are used to determine the discharge values (USDI, 1981). Plan maps from the Bureau are used to determine the design capacity of the overchutes. A strip map was flown by Dibble & Associates along the CAP (Aerial Mapping Company, 1996). Storage volumes are determine by planimetering the contour elevations for each stage and calculating the volumes.

The CAP overchutes south of the Superstition Freeway utilizes the maximum design capacity as identified in the Bureau of Reclamation plan maps (USDI, 1979). CAP Overchutes 1A and 1B have a maximum flow of 217 cfs each. To assure that excess volume is not added into the southern area, the upstream volume was determined. The volume is then distributed over the time with a peak flows of 217 cfs for each overchute.

4.5.3 Outflow from Pinal County Structures

The flow from the Pinal County Structures into the Powerline Floodway is assumed to be zero. This study focuses on the specific flows between the Pinal County Structures and the East Maricopa Floodway. In the study, the critical storm is designed to occur over the lower watershed. To have a storm over both the upper and lower watershed would reduce the rainfall significantly in the lower watershed. It is difficult to determine the outflow from the Powerline and Vineyard Flood Retarding Structures for specific storm frequencies that occur downstream. The peak outflow would most likely occur at a later time than the peak flow on subbasin that are closer to the EMF. Therefore, the assumption is made not to have base flows within the Floodway.

5.0 RESULTS AND CONCLUSIONS

The results of the hydrologic models for the 100-, 50- and 10-year 24-hour storms for existing and future conditions at selected locations are summarized in Tables 1.1 and 1.2. Complete lists of discharges for all frequencies and conditions are available in Appendices A and B, which contain the HEC-1 output.

This model is developed to evaluate flows in the East Mesa area and should be used for planning purposes only to alleviate the flooding problems in the area.

Enforcement of the 100-year 2-hour retention requirements will result in reduction of the majority of peak flows. Should any jurisdiction not fully enforce the retention requirements, flows are anticipated to be higher.

5.1 Comparison with other studies

5.1.1 EADMS14

The EADMS14 was developed by the Flood Control District of Maricopa County to give an up-to-date multipurpose model for locating and correcting local drainage problems in the eastern portion of Maricopa County. It has since been superseded by the Southeast Mesa ADMS and the East Mesa ADMP.

The EADMS14 model is a high-resolution model, meaning that it is in great detail, particularly for subbasin delineation. The EADMS14 model has 318 subbasins while the East Mesa ADMP has 141 subbasins. Being this detailed allows for very specific flows at many points throughout the model. Although the East Mesa ADMP has less subbasins, it provides for flow at various important points within the model. This might be at major intersections, where a wash crosses a road, or downstream from CAP overchute locations. Table 5.1 shows flows for various points within the models.

There are also differences between the EADMS14 and East Mesa ADMP as far as input parameters are concerned. Although they both utilize the 100-year 24-hour rainfall for their analysis, they differ in the time interval used for the cumulative precipitation distribution. The EADMS14 also has slightly higher areal reduction values than does the East Mesa ADMP.

The EADMS14 routes flows using the kinematic wave method. The East Mesa ADMP accomplished flow routing by the normal depth method. Diversion of flows within the EADMS14 model occurs with more regularity than it does within the ADMP model. The EADMS14 used the diversion record to divert 100% of the flows across roads. When the diverted flow is retrieved the area contributing to that flow is not added at the new concentration point. This creates a dangling hydrograph effect at the main stem from which the diverted flow occurred. This leads to greater areal reduction within the model and smaller flows at various concentration points in the study area.

There are also differences in the way the CAP overchutes are simulated in each model. The EADMS14 model uses a stage-storage relationship for the upstream side of the overchutes for six of the 13 overchutes in the study area. One overchute is routed through to the other side and the other six are modeled using inflow (DI records) and outflow (DQ). In the East Mesa ADMP all CAP overchutes have stage-storage relationships developed for them from 1 inch = 400 foot contour maps (Aerial Mapping Company, 1996)

5.1.2 Queen Creek Area Drainage Master Study

The Queen Creek Area Drainage Master Study (Wood and Associates, 1991) was prepared by Wood and Associates for the Flood Control District of Maricopa County. The purpose of the study was to identify flooding areas in the Queen Creek area and to serve as a guideline for future planning in this area.

The study area comprises 123 subbasins, 38 of which are within the East Mesa ADMP. The corresponding area within the ADMP has 37 subbasins. The Queen Creek ADMS uses the 100-year 24-hour SCS Type II rainfall distribution for their analysis, but it has different areal reduction values.

The Queen Creek ADMS uses composite curve numbers for each subbasin which were calculated in accordance with the SCS TR-55 procedure (USDA, 1986b). The East Mesa ADMP uses the Green and Ampt loss rate parameters and the Drainage Design Menu System to develop a unit hydrograph for each subbasin.

The Queen Creek ADMS does not model the TRW facility as having onsite retention. The East Mesa ADMP uses a diversion record for the 110 acre-feet of storage within TRW's property. The beginning reaches of the Powerline Floodway were modeled as having a baseflow of 600 cfs in the Queen Creek ADMS. The East Mesa ADMP does not model the Powerline Floodway with a constant outflow from the Pinal County Flood Retarding Structures. In the East Mesa ADMP the critical storm is designed to occur over the lower watershed. To have a storm over both the upper and lower watersheds would reduce the rainfall significantly in the lower watershed. It is difficult to determine the outflow from the Powerline and Vineyard Flood Retarding Structures for specific storm frequencies that occur downstream. The peak outflow would most likely occur at a later time than the peak flow on subbasins that are closer to the outfall (EMF). Therefore, it is assumed that is no flow in the Powerline Floodway at the time the critical storm falls on the lower portion of the watershed.

Since different hydrograph and routing methods, temporal patterns and methodologies are used between the two models, a direct comparison of the results should be done with caution. Table 5.1 shows the comparison of flows at selected locations.

5.1.3 Final Conceptual Design Report for the Rittenhouse Road Channel

Gannet Fleming, Inc. for the Flood Control District of Maricopa County prepared the Final Conceptual Design Report for the Rittenhouse Road Channel. Based upon the Queen Creek ADMS, this report investigates design alternatives for a flood control channel extending from the Queen Creek School west to the East Maricopa Floodway. Field reviews and 200-scale maps were used to make minor changes to subbasin boundaries and routing patterns.

5.1.4 Southeast Mesa ADMS

The Southeast Mesa ADMS Area Drainage Master Study was developed by the Flood Control District of Maricopa County to assist in future planning for the extreme southeast corner of Maricopa County. The Southeast Mesa ADMS is the base for which the southern portion of the East Mesa ADMP is created. To assist planners in drainage development, the original area is subdivided into additional basins for the ADMP. Subdividing the subbasins results in slightly higher flows for the combined peaks.

The Southeast Mesa ADMS study area did not extend north of the Superstition Freeway. Those flows entering the area from the north were generated by the East Maricopa County ADMS (FCDMC, 1990b) and modeled as input hydrographs at points where culverts flow under the Superstition Freeway. Development north of the freeway will change the inflow hydrograph to the area below the freeway. To link the northern portion of the ADMP and the southern portion dynamically, the outflow hydrographs from the north portion are saved in a DSS file and recalled for the inflow hydrographs for the southern portion

5.2 Limitations and Uses

When examining the results of this study, several facts should be considered. This investigation was conducted without comprehensive detailed topographic data. Many of the features in these surveys are subject to change over time. The density of data is rather sparse. Therefore, future revisions to this study or more detailed analyses following this study may arrive at different results.

Another important consideration in the examination of the results of this study is the limited amount of local relief throughout the study area. Small features or seemingly small changes in topographic features (such as roads) are capable of creating relatively significant changes in flow patterns and accumulations. In many instances, roadways and small irrigation canals form boundaries between subbasins. Removal or change to these facilities is therefore likely to alter

Table 5.1
Study Comparison

Location	Existing Flows from East Mesa ADMP (cfs)	Flows from Southeast Mesa ADMS (cfs)	Flows from EADMS1 4 (cfs)	Flows from Queen Creek ADMS (cfs)	Flows from Rittenhouse Rd Channel Report (cfs)
Ellsworth Rd north of Elliot Rd	1085	1055	1010	N/A	N/A
Ellsworth Rd south of Elliot Rd	2268	2115	1920	N/A	N/A
Ellsworth Rd north of Ray Rd	1444	966	N/A	1820	N/A
Pecos Rd, east of Ellsworth Rd	434	885	N/A	360	410
Signal Butte Rd, north of Williams Field Rd	1112	3163	N/A	1600	N/A
Germann Rd, east of Ellsworth Rd	727	571	N/A	410	385
Powerline Floodway at junction with Williams North Perimeter Channel	4713	4027	N/A	N/A	N/A
CAP overchute #2, east of Ellsworth, north of University	675	N/A	407	N/A	N/A
University, West of Meridian Rd	347	N/A	186	N/A	N/A
Broadway Rd, east of Ellsworth Rd	1141	N/A	659	N/A	N/A
Broadway, east of Hawes Rd	2356	N/A	1150	N/A	N/A
Southern Ave, east of Crismon Rd	1321	N/A	881	N/A	N/A

the results contained in this report. Finally, evaluations made during this investigation are made with a regional perspective. The exact details of how certain hydraulic features behave, or exactly what happens in very small areas may not have been considered. Therefore, this study and the resulting HEC-1 model should be viewed as tools for the consideration and evaluation of alternatives for regional drainage systems in the area and their impact on one another.

5.3 Conclusions

The purpose of this investigation is to develop a tool for use in the identification of and search for solutions to roadway drainage problems in the East Mesa area. This study provides both the accumulation and summarization of the pertinent information on regional drainage. The HEC-1 computer model provides a basis for the examination of various alternatives for drainage facilities in the area. The model provides a framework for more detailed analyses in the future.

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APPENDIX A

PLATES

APPENDIX A

Plate 1 East Mesa ADMP Community Map, North of Superstition Freeway **A-1**

Plate 2 East Mesa ADMP Community Map, South of Superstition Freeway **A-2**

Plate 3 East Mesa ADMP Soils Map, North of Superstition Freeway **A-3**

Plate 4 East Mesa ADMP Soils Map, South of Superstition Freeway **A-4**

Plate 5 East Mesa ADMP Current Land Use Map, North of Superstition Freeway **A-5**

Plate 6 East Mesa ADMP Current Land Use Map, South of Superstition Freeway **A-6**

Plate 7 East Mesa ADMP Future Land Use Map, North of Superstition Freeway **A-7**

Plate 8 East Mesa ADMP Future Land Use Map, South of Superstition Freeway **A-8**

Plate 9 East Mesa ADMP Schematic Map, North of Superstition Freeway **A-9**

Plate 10 East Mesa ADMP Schematic Map, South of Superstition Freeway **A-10**

Plate 11 East Mesa ADMP Flood Control Structure Map, North of Superstition Freeway **A-11**

Plate 12 East Mesa ADMP Flood Control Structure Map, South of Superstition Freeway **A-12**

East Mesa ADMP Community Map

(Northern Section of Study)

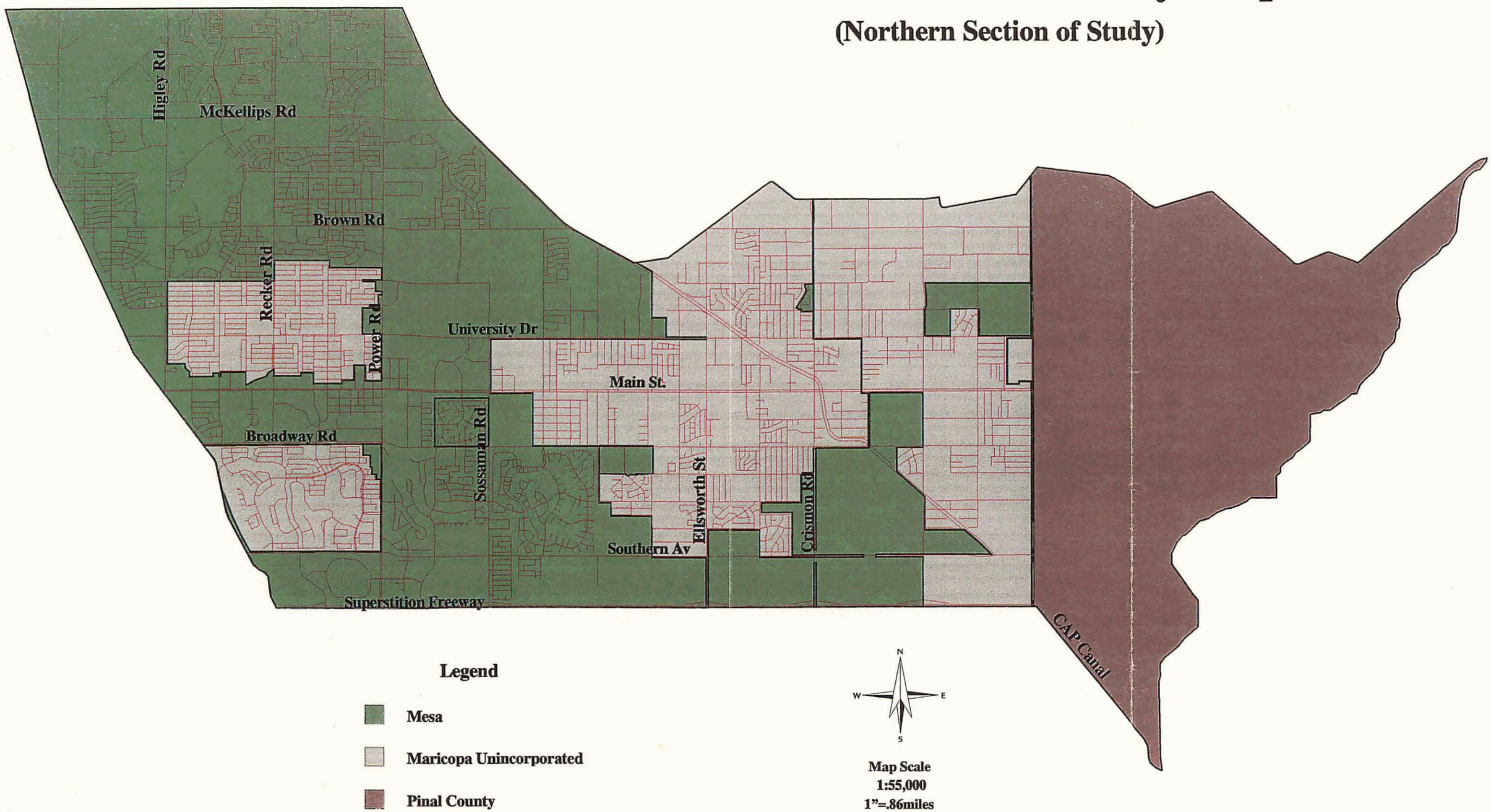
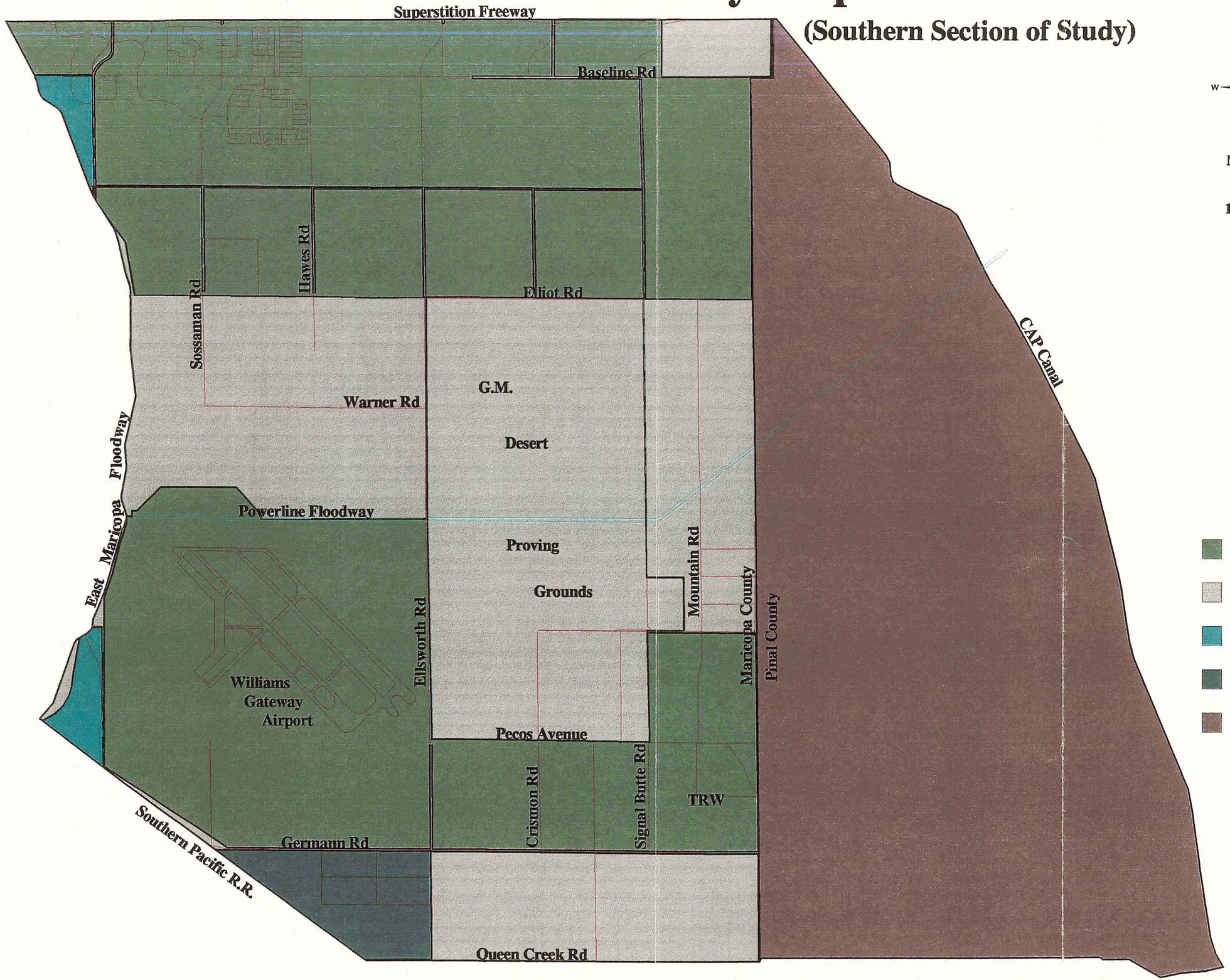


Plate 1

East Mesa ADMP Community Map

(Southern Section of Study)



Map Scale
1:55,000
1"=.86miles

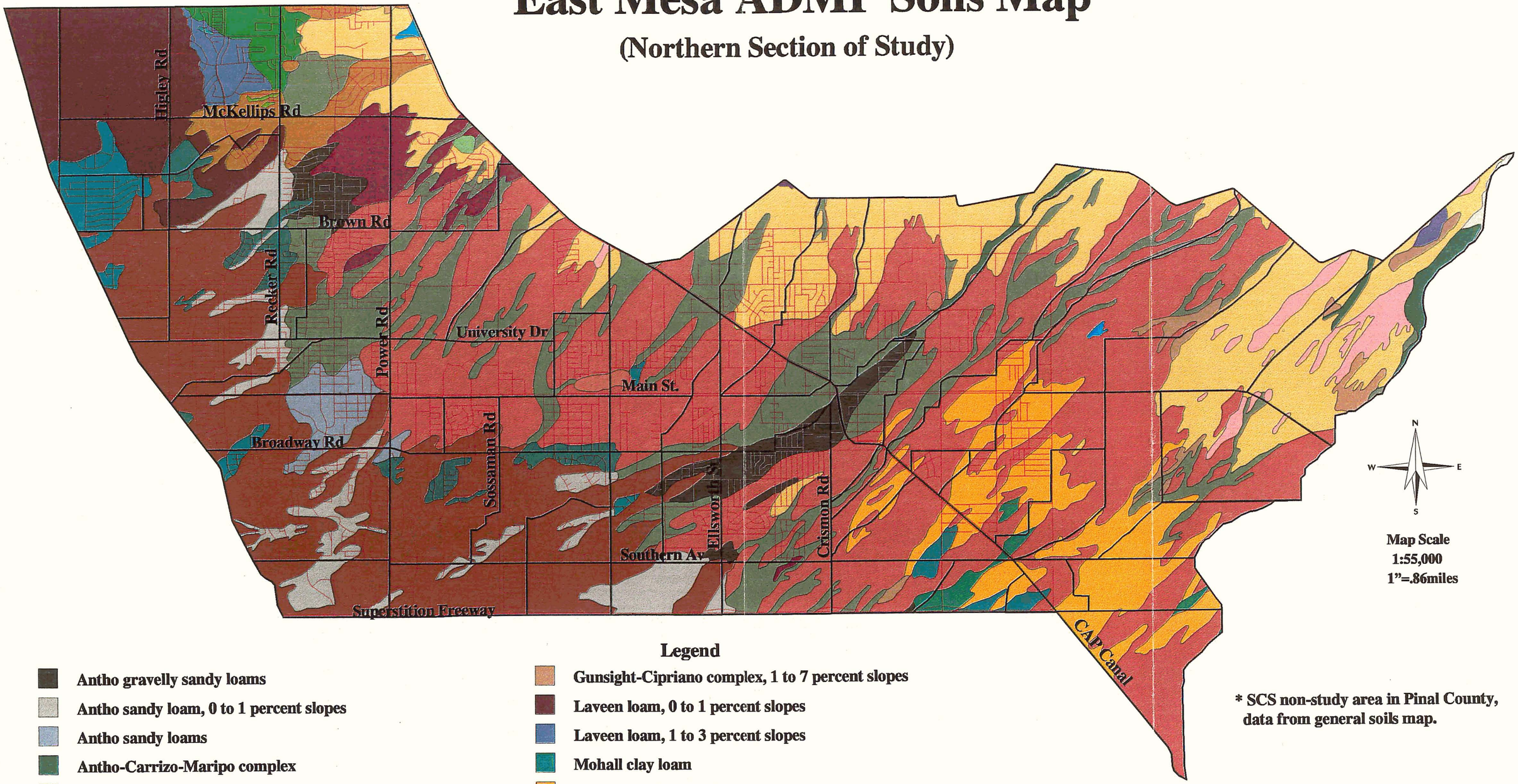
Legend

- Mesa
- Maricopa Unincorporated
- Gilbert
- Queen Creek
- Pinal County

Plate 2

East Mesa ADMP Soils Map

(Northern Section of Study)



* SCS non-study area in Pinal County, data from general soils map.

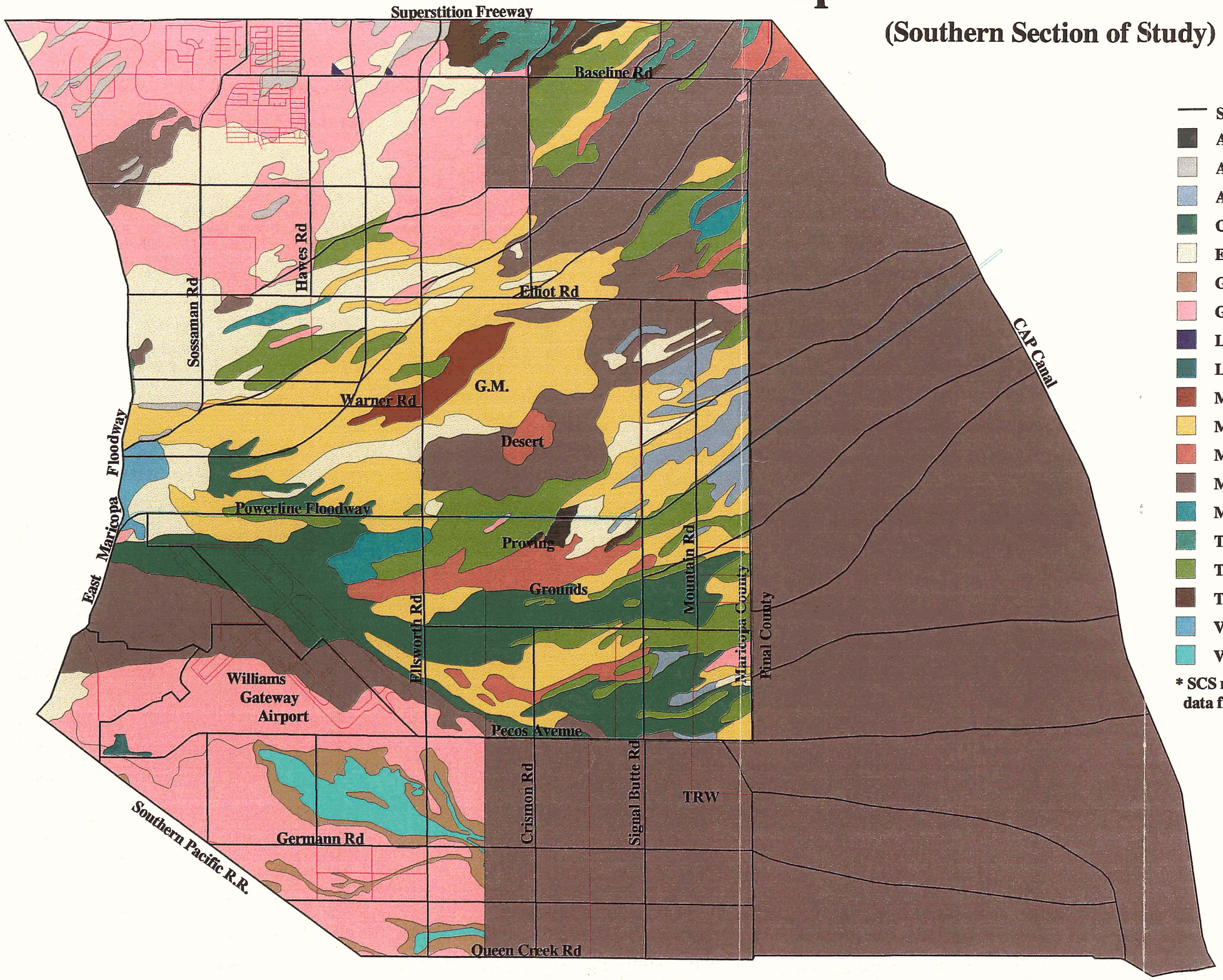
Legend

- Antho gravelly sandy loams
- Antho sandy loam, 0 to 1 percent slopes
- Antho sandy loams
- Antho-Carrizo-Maripo complex
- Brios-Carrizo complex, 1 to 5 percent slopes
- Carefree cobbly clay loam, 1 to 8 percent slopes
- Ebon very gravelly loam, 1 to 8 percent slopes
- Estrella loam
- Gilman loam
- Gran-Wickenburg complex, 1 to 10 percent slopes
- Gran-Wickenburg-Rock outcrop complex, 1 to 7 percent slopes
- Gunsight-Cipriano complex, 1 to 7 percent slopes
- Laveen loam, 0 to 1 percent slopes
- Laveen loam, 1 to 3 percent slopes
- Mohall clay loam
- Mohall clay loam, calcareous solum
- Mohall loam
- Pinal gravelly loam, 1 to 3 percent slopes
- Pinamt-Tremant complex, 1 to 10 percent slopes
- Quilotosa-Vaiva-Rock outcrop complex, 20 to 65 percent slopes
- Rillito gravelly loam, 1 to 3 percent slopes
- Rillito loam, 0 to 3 percent slopes
- Suncity-Cipriano complex, 1 to 7 percent slopes
- Tremant gravelly loams
- Tremant gravelly sandy loams
- Tremant-Antho complex, 1 to 5 percent slopes
- Tremant-Gunsight-Rillito complex, 1 to 5 percent slopes
- Tremant-Rillito complex
- Subbasin Boundary

Plate 3

East Mesa ADMP Soils Map

(Southern Section of Study)



Legend

- Subbasin Boundary
- Antho gravelly sandy loams
- Antho sandy loam, 0 to 1 percent
- Antho sandy loams
- Contine clay loam
- Estrella loam
- Gilman fine sandy loam
- Gilman loam
- Lakes, ponds, reservoirs
- Land fill
- Mohall clay
- Mohall clay loam
- Mohall clay loam, calcareous
- Mohall loam
- Mohall loam, calcareous solum
- Tremant gravelly loams
- Tremant gravelly sandy loams
- Tremant-Antho complex, 1 to 5 percent
- Vecont clay
- Vint loamy fine sand

* SCS non-study area in Pinal County, data from general soils map.

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W E
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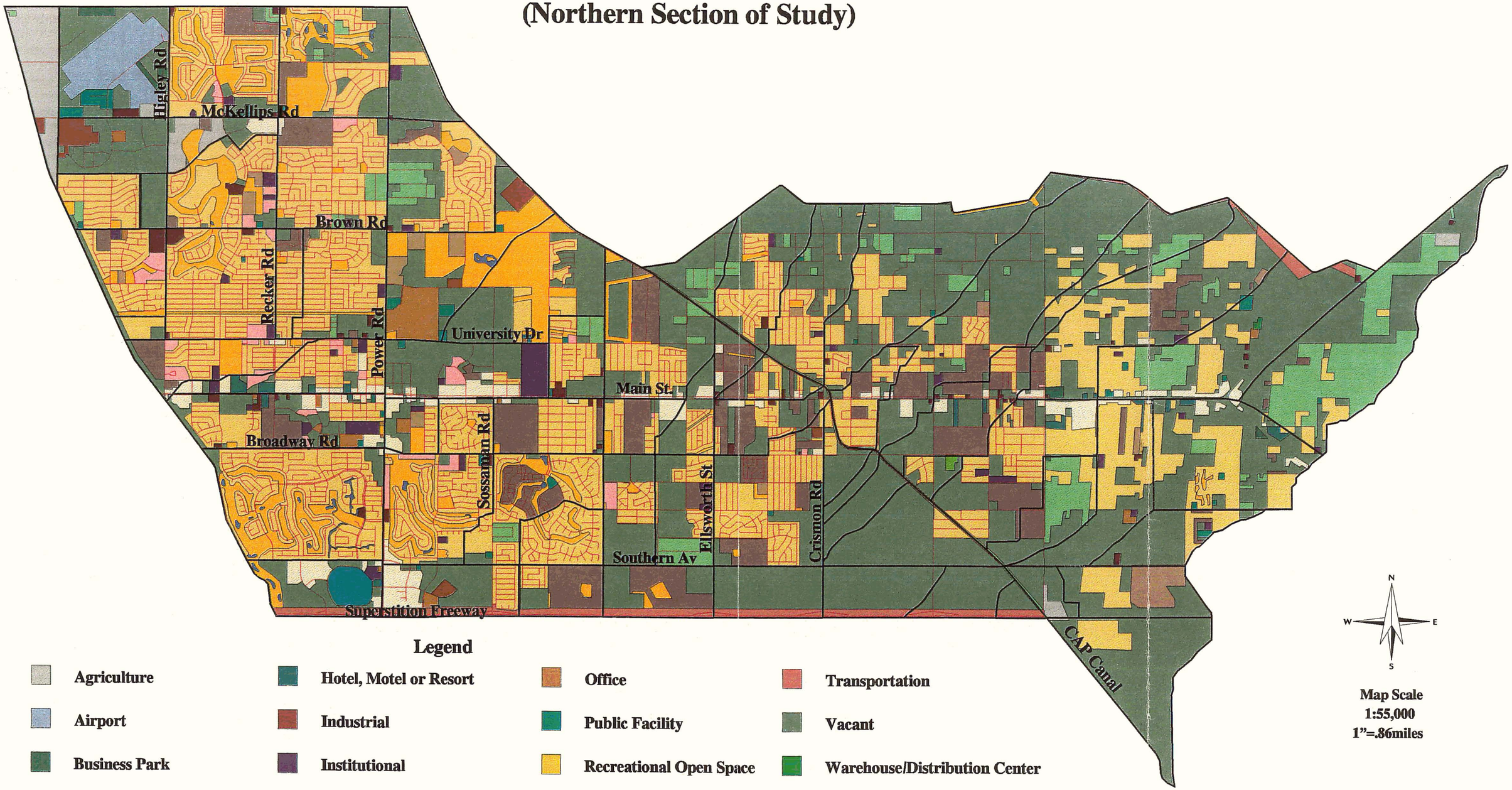
Map Scale
1:55,000
1"=.86miles

Plate 4

East Mesa ADMP Current Landuse Map

(Northern Section of Study)



Legend

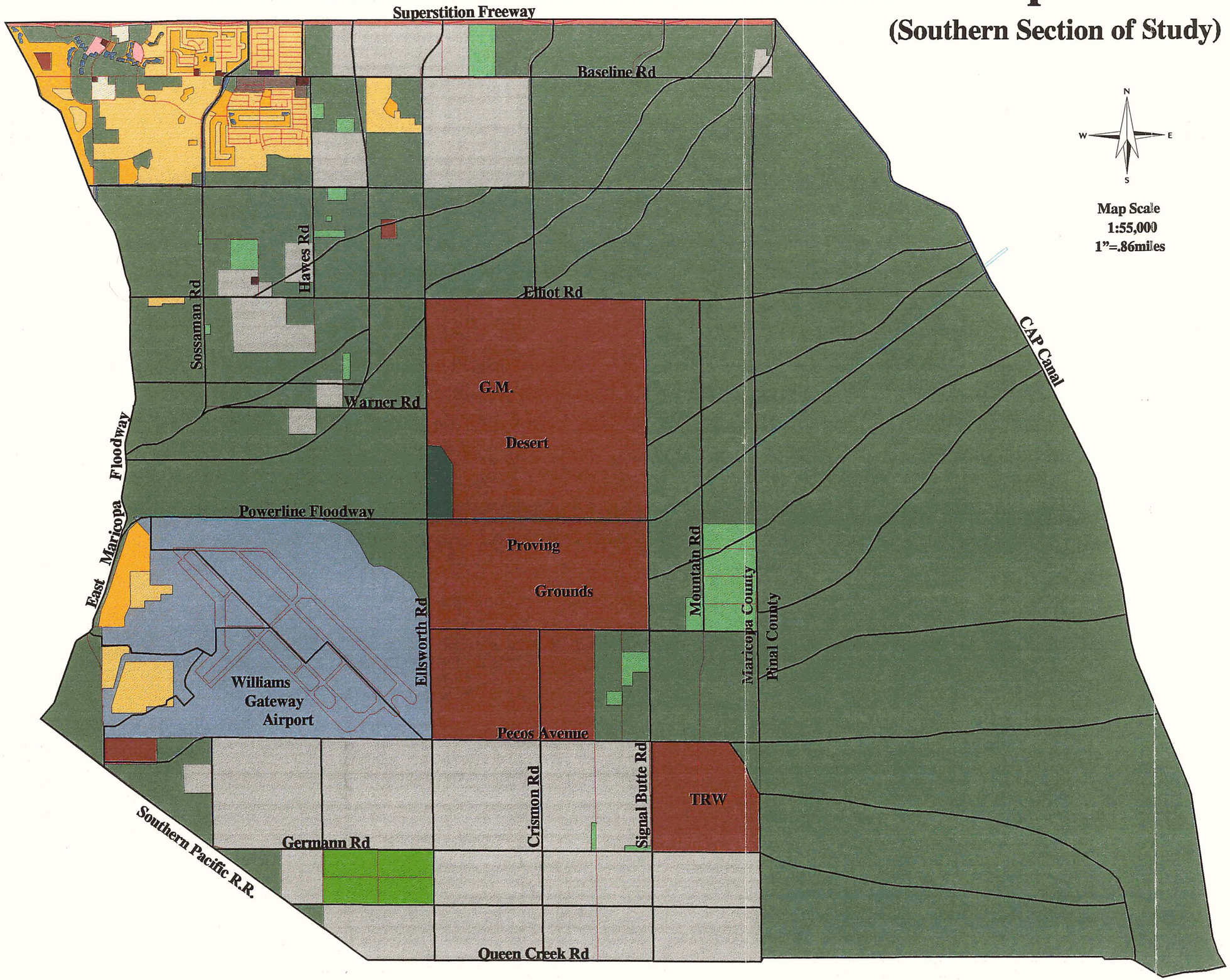
- Agriculture
- Airport
- Business Park
- Community Retail Center
- Educational
- High Density Residential
- Hotel, Motel or Resort
- Industrial
- Institutional
- Large Lot Residential
- Medium Density Residential
- Neighborhood Retail Center
- Office
- Public Facility
- Recreational Open Space
- Regional Retail Center
- Rural
- Small Lot Residential
- Transportation
- Vacant
- Warehouse/Distribution Center
- Water
- Subbasin Boundary

Map Scale
1:55,000
1"=.86miles

Plate 5

East Mesa ADMP Current Landuse Map

(Southern Section of Study)



Map Scale
1:55,000
1"=.86miles

Legend

- Subbasin Boundary
- Agriculture
- Airport
- Business Park
- Community Retail Center
- Educational
- High Density Residential
- Industrial
- Institutional
- Large Lot Residential
- Medium Density Residential
- Neighborhood Retail Center
- Office
- Public Facility
- Recreational Open Space
- Rural
- Small Lot Residential
- Transportation
- Vacant
- Water

Plate 6

East Mesa ADMP Future Landuse Map

(Northern Section of Study)

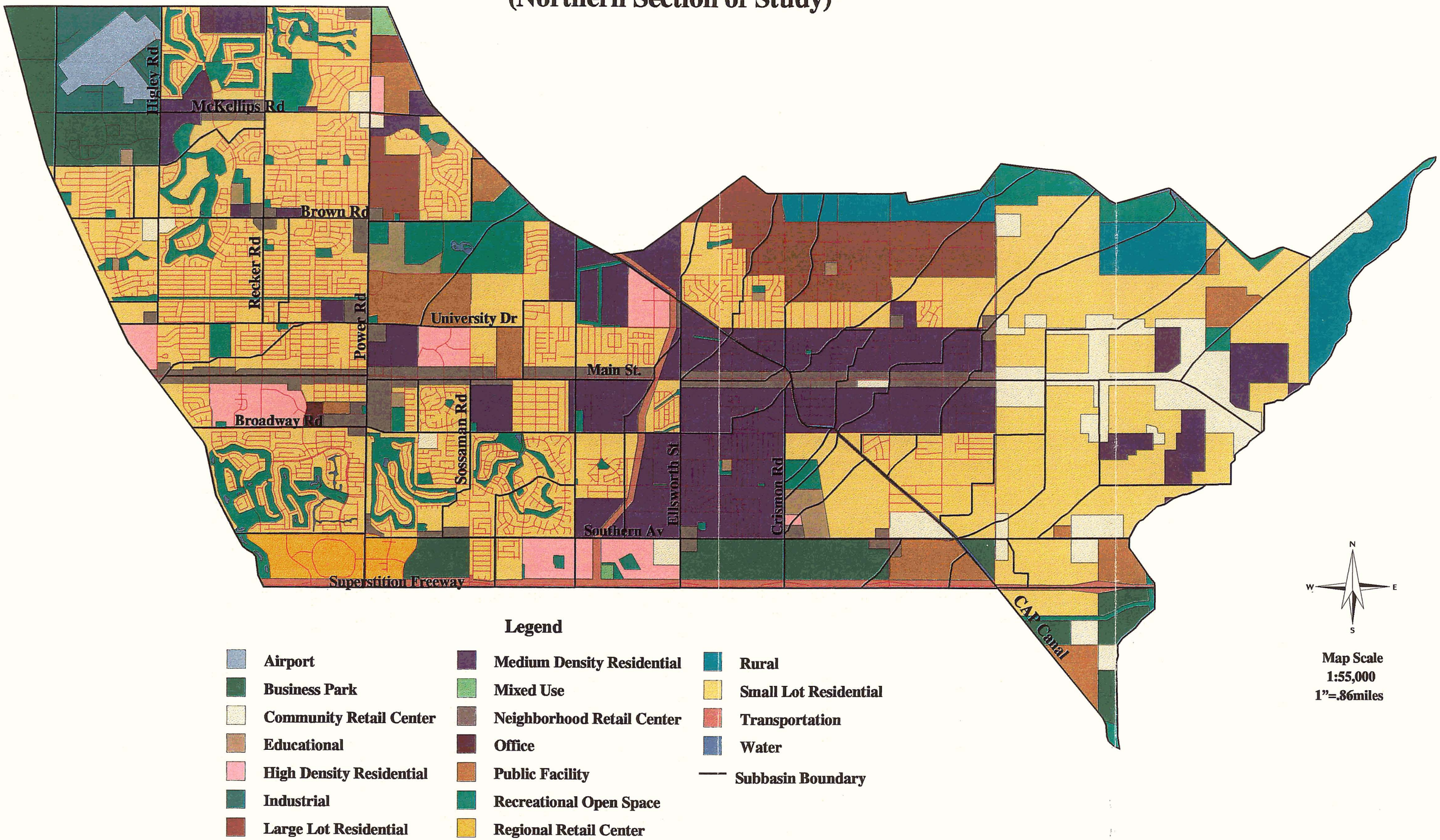
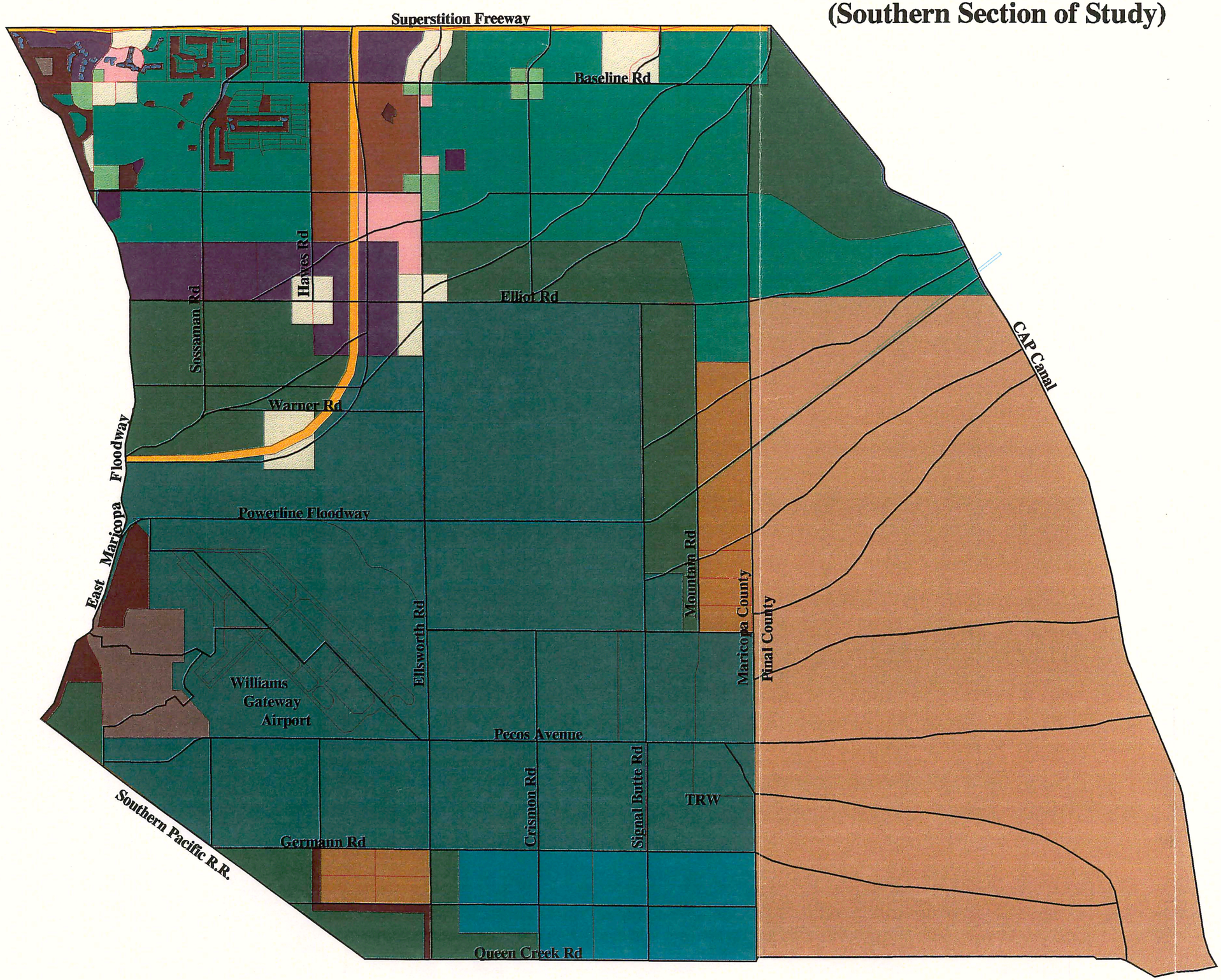


Plate 7

East Mesa ADMP Future Landuse Map

(Southern Section of Study)



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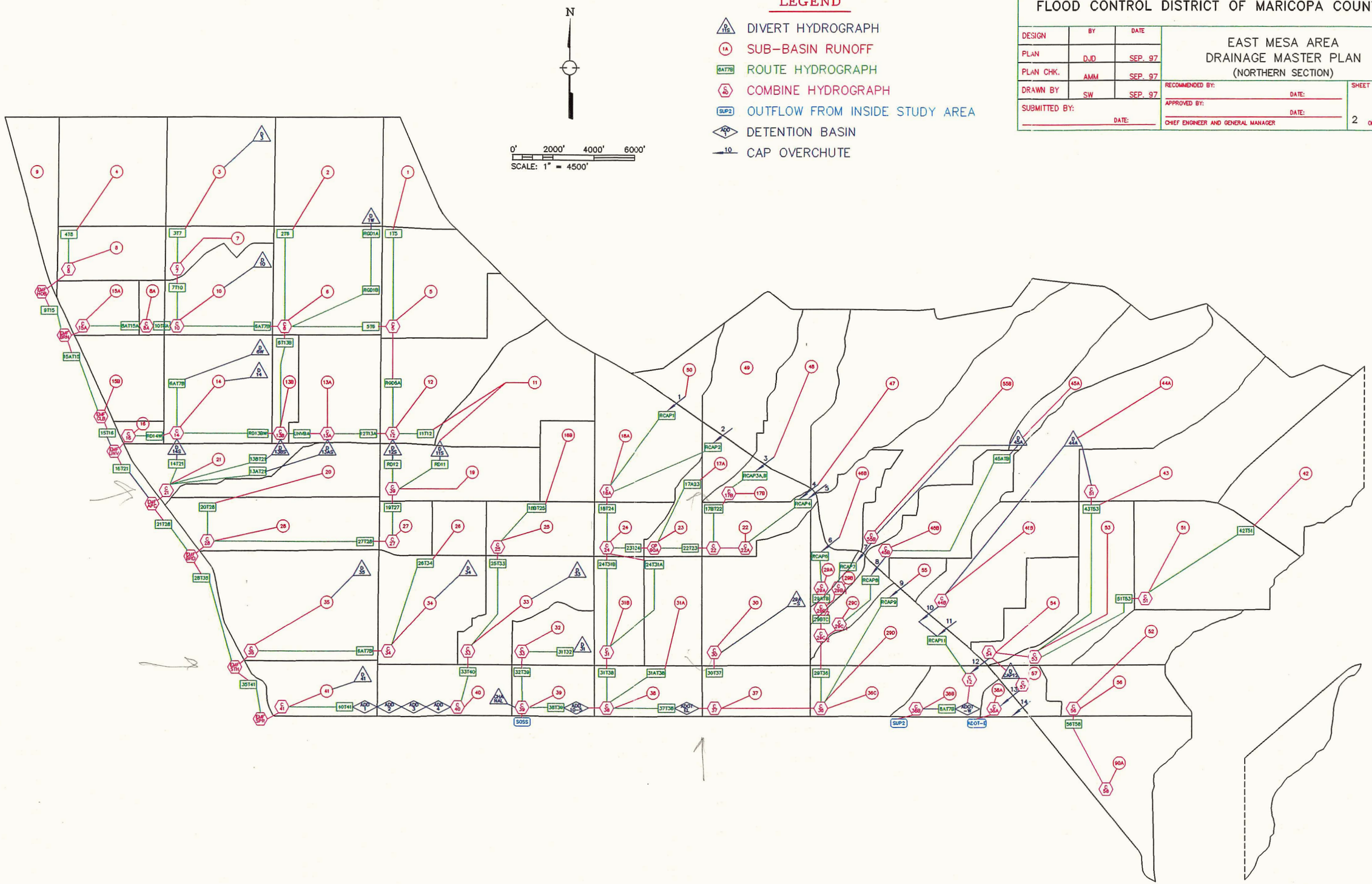
Map Scale
1:55,000
1"=.86miles

Legend

- Subbasin Boundary
- Business Park
- Community Retail Center
- Desert
- Educational
- High Density Residential
- Industrial
- Medium Density Residential
- Mixed Use
- Neighborhood Retail Center
- Public Facility
- Recreational Open Space
- Rural
- Small Lot Residential
- Transportation
- Warehouse/Distribution Center
- Water

Plate 8



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

DESIGN	BY	DATE
PLAN	DJD	SEP. 97
PLAN CHK.	AMM	SEP. 97
DRAWN BY	SW	SEP. 97

SUBMITTED BY: DATE:

EAST MESA AREA
DRAINAGE MASTER PLAN
(NORTHERN SECTION)

RECOMMENDED BY: DATE:
APPROVED BY: DATE:
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 2 OF 2

Plate 9

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

DESIGN	BY	DATE
PLAN	DJD	SEP. 97
PLAN CHK.	AMM	SEP. 97
DRAWN BY	SW	SEP. 97

SUBMITTED BY: DATE:

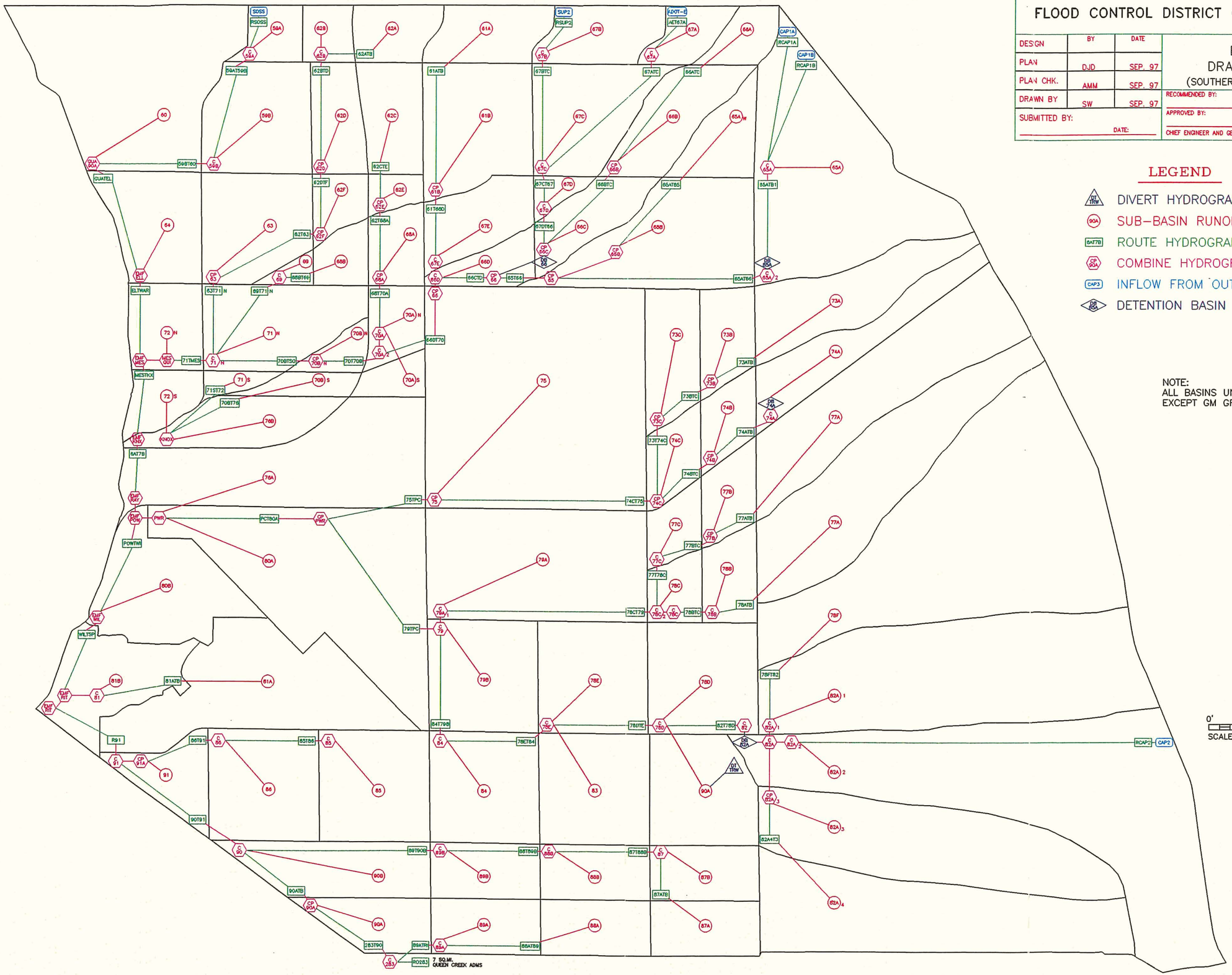
EAST MESA AREA
DRAINAGE MASTER PLAN
(SOUTHERN SECTION, FUTURE CONDITION)

RECOMMENDED BY: DATE:

APPROVED BY: DATE:

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 2 OF 2



LEGEND

- DIVERT HYDROGRAPH
- SUB-BASIN RUNOFF
- ROUTE HYDROGRAPH
- COMBINE HYDROGRAPH
- INFLOW FROM OUTSIDE STUDY AREA
- DETENTION BASIN

NOTE:
ALL BASINS UNDER FUTURE CONDITIONS
EXCEPT GM GROUNDS AND PINAL COUNTY.

N

0' 2000' 4000' 6000'
SCALE: 1" = 4500'

Plate 10

East Mesa ADMP Flood Control Structure Map

(Northern Section of Study)

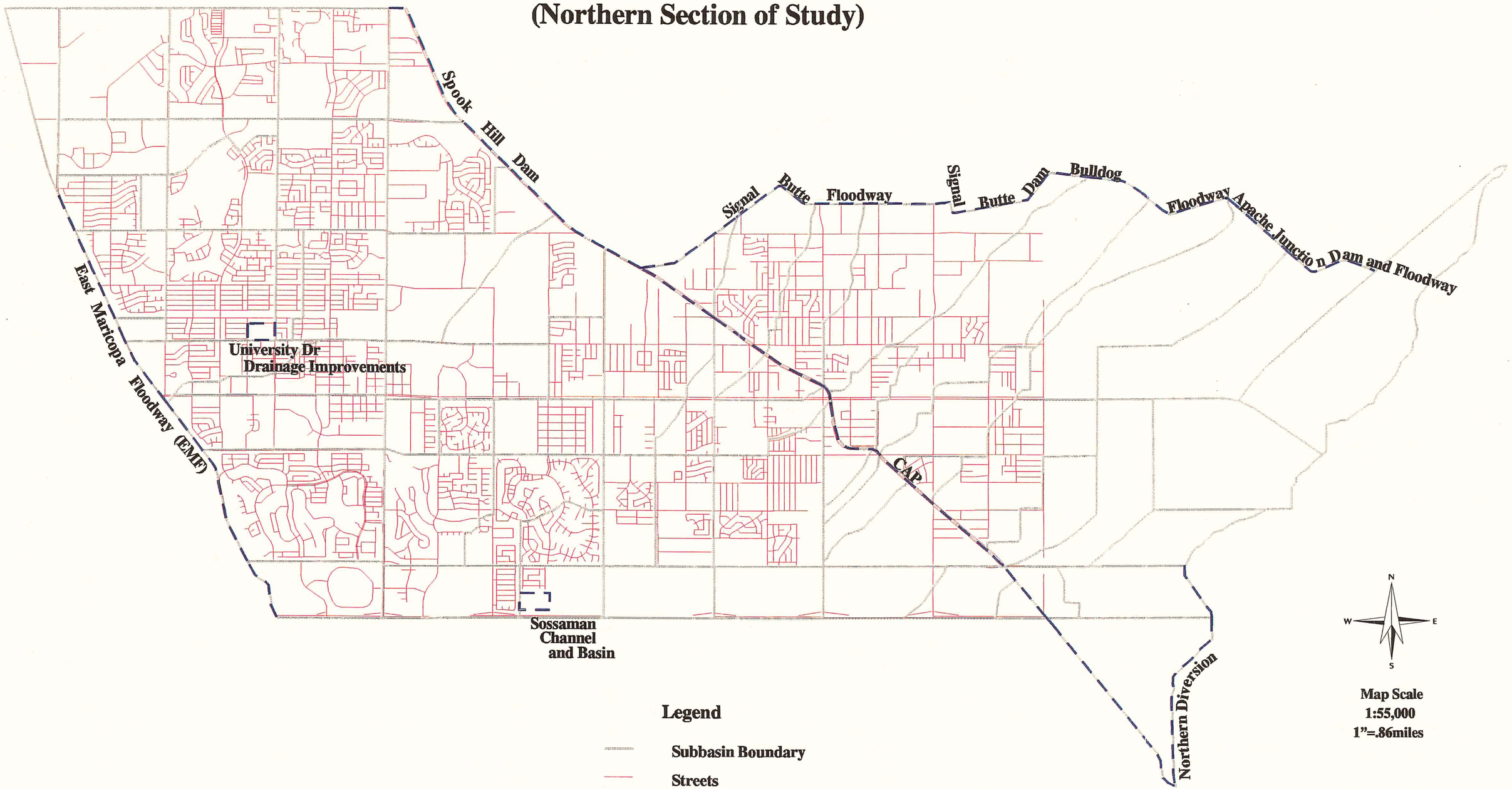
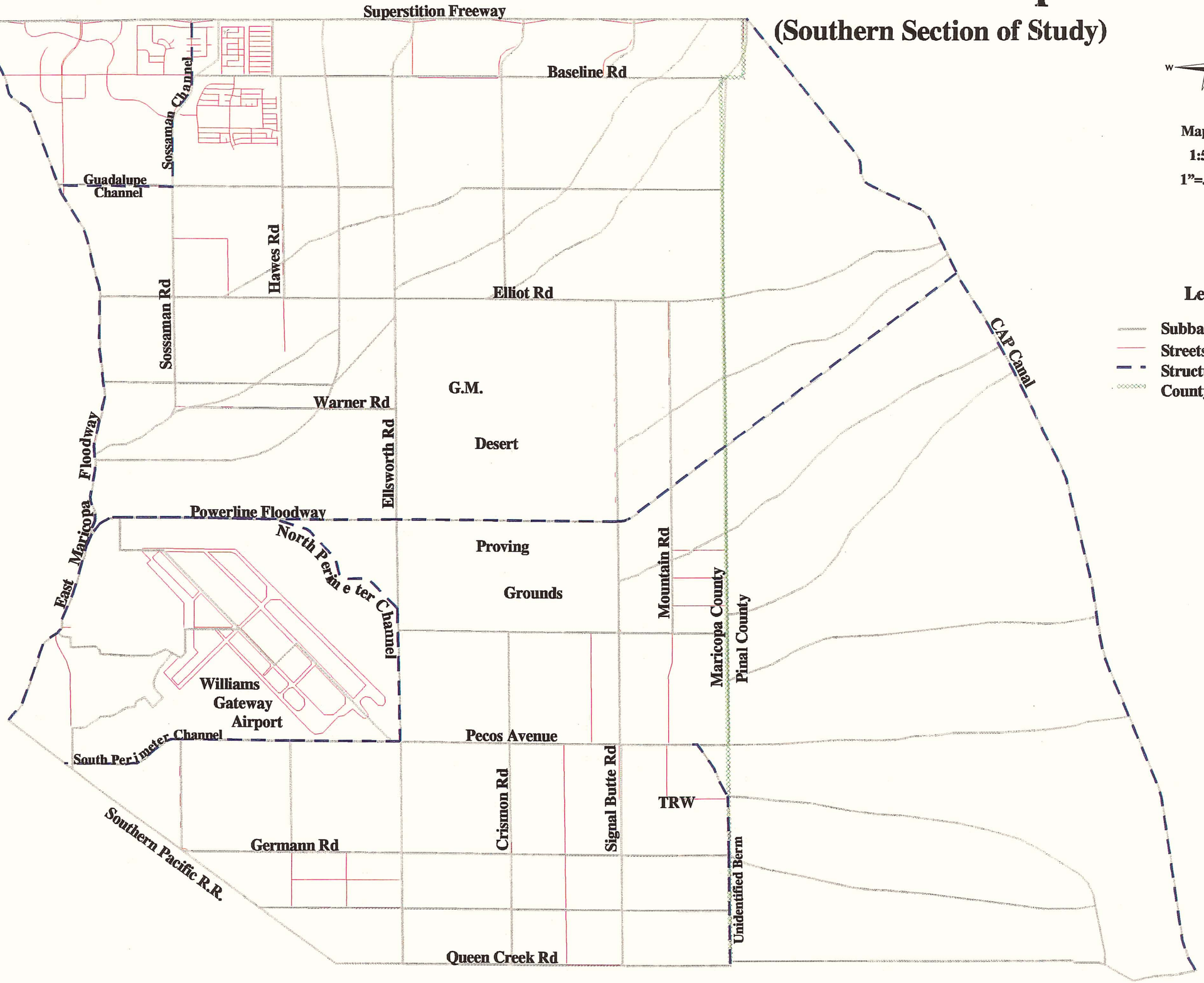


Plate 11

East Mesa ADMP Flood Control Structure Map

(Southern Section of Study)



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Map Scale
1:55,000
1"=.86miles

Legend

- Subbasin Boundary
- Streets
- Structures
- County Boundary

Plate 12

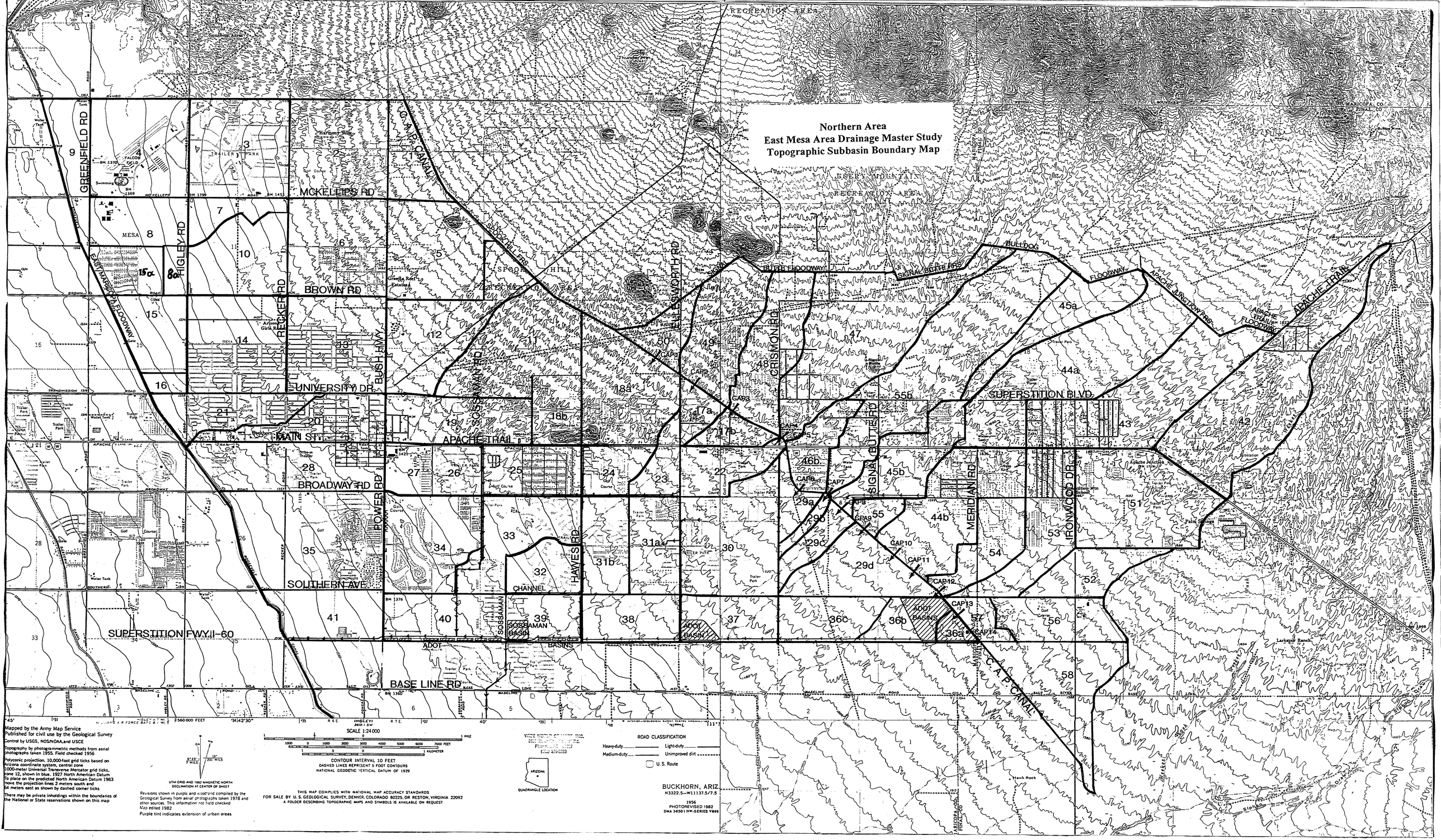
APPENDIX B

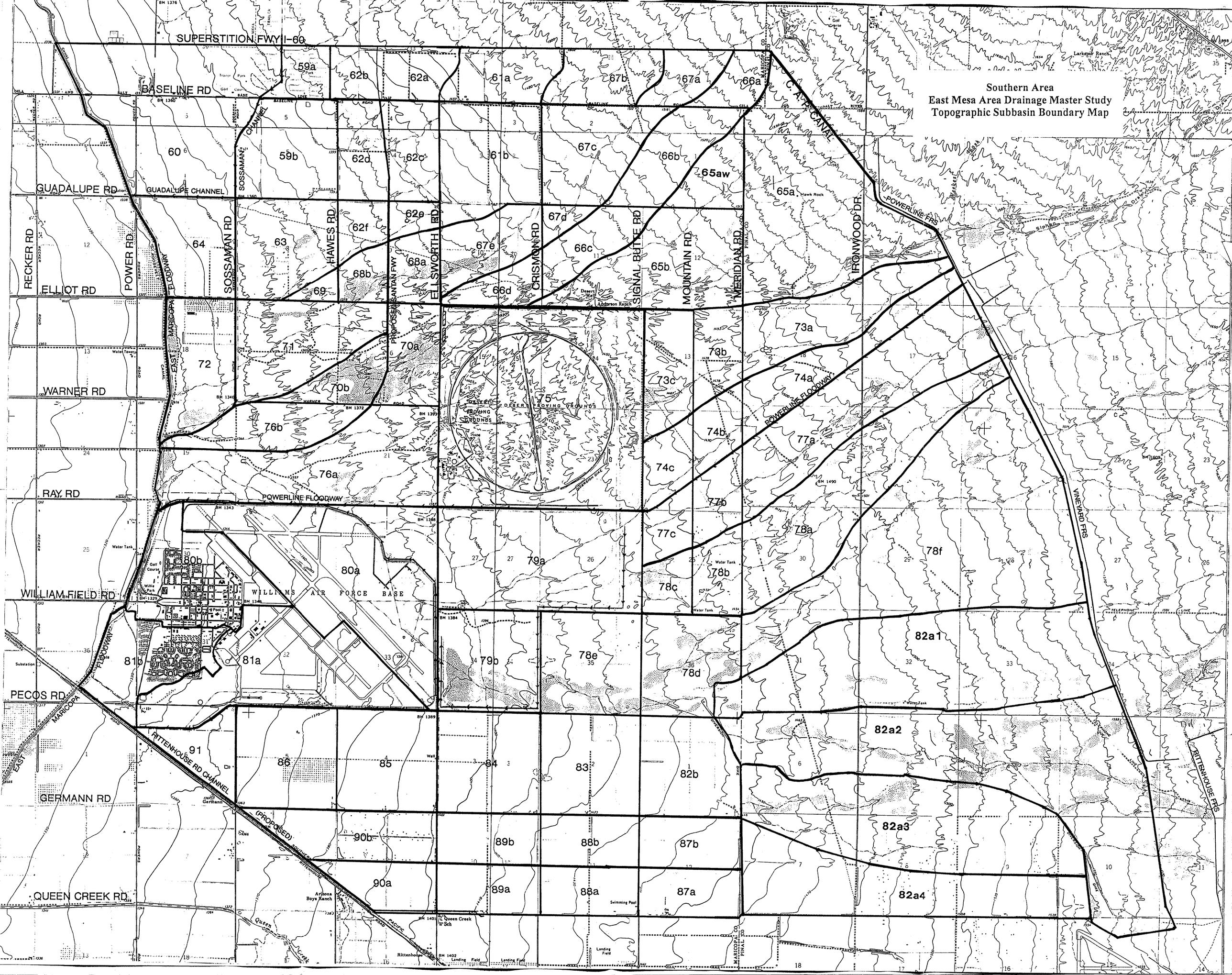
TOPOGRAPHIC MAPS

APPENDIX B

PACKET B-1 North Mesa Area, Topographic Map **B-1**

PACKET B-2 Southern Mesa Area, Topographic Map..... **B-2**


Northern Area
East Mesa Area Drainage Master Study
Topographic Subbasin Boundary Map
GREENFIELD RD
HIGLEY RD
RECKER RD
BUSH HWY
MCKELLIPS RD
BROWN RD
UNIVERSITY DR
MAIN ST
APACHE TRAIL
BROADWAY RD
POWER RD
SOUTHERN AVE
BASE LINE RD
SUPERSTITION FWY.(I-60)
HAWES RD
CRISMON RD
ELLSWORTH RD
SIGNAL BUTTE RD
MERIDIAN RD
IRONWOOD DR
SUPERSTITION BLVD.
C.A.P. CANAL
EAST MARICOPA FLOODWAY
SPOOKHILL FLOODWAY
BUTTE FLOODWAY
SIGNAL BUTTE FWY
BULLDOG
FLOODWAY
APACHE JUNCTION FWY
APACHE TRAIL FLOODWAY
SOSSAMAN BASIN
ADOT BASINS
CHANNEL
DESERT MOUNTAIN RECREATION AREA
SPOOKHILL
MESA
Mapped by the Army Map Service
Published for civil use by the Geological Survey
Control by USGS, NOS/NOAA and USCE
Topography by photogrammetric methods from aerial photographs taken 1955. Field checked 1956
Polyconic projection. 10,000-foot grid ticks based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue. 1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 2 meters south and 54 meters east as shown by dashed corner ticks
There may be private inholdings within the boundaries of the National or State reservations shown on this map
UTM GRID AND 1982 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
Revisions shown in purple and woodland compiled by the Geological Survey from aerial photographs taken 1978 and other sources. This information not field checked
Map edited 1982
Purple tint indicates extension of urban areas
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
DASHED LINES REPRESENT 5 FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
QUADRANGLE LOCATION
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
U.S. Route
BUCKHORN, ARIZ.
N3322.5—W11137.5/7.5
1956
PHOTOREVISED 1982
DMA 3650 I NW-SERIES V895


Southern Area
East Mesa Area Drainage Master Study
Topographic Subbasin Boundary Map
SUPERSTITION FWY I-60
BASELINE RD
GUADALUPE RD
GUADALUPE CHANNEL
ELLIOT RD
WARNER RD
RAY RD
WILLIAM FIELD RD
PECOS RD
GERMANN RD
QUEEN CREEK RD
RECKER RD
POWER RD
SOSSAMAN RD
HAWES RD
ELLSWORTH RD
CRISMON RD
SIGNAL BUTTE RD
MOUNTAIN RD
MERIDIAN RD
IRONWOOD DR.
C.A.P. CANAL
POWERLINE FRS
POWERLINE FLOODWAY
VINEYARD FRS
RITTENHOUSE FRS
RITTENHOUSE RD CHANNEL
(PROPOSED)
EAST MARICOPA FLOODWAY
PROPOSED SANTAN FWY
WILLIAMS AIR FORCE BASE
DESERT PROVING GROUNDS
Larkspur Ranch
Hawk Rock
Desert Well
Anderson Ranch
Arizona Boys Ranch
Queen Creek Sch
Rittenhouse
Germann
Siphon
59a
62b
62a
61a
67b
67a
66a
60
59b
62d
62c
61b
67c
66b
65aw
65a
64
63
62e
62f
67d
66c
68a
68b
67e
66d
65b
69
71
70a
70b
72
73a
73b
73c
74a
74b
74c
75
76a
76b
77a
77b
77c
78a
78b
78c
78d
78e
78f
79a
79b
80a
80b
81a
81b
82a1
82a2
82a3
82a4
82b
83
84
85
86
87a
87b
88a
88b
89a
89b
90a
90b
91

APPENDIX C

INPUT DATA
COMPUTER DISKS

APPENDIX C

PACKET C1 HEC-1 Data for Existing Conditions **C-1**

PACKET C2 HEC-1 Data for Future Conditions **C-2**

APPENDIX D

100-YEAR, 24-HOUR
EXISTING CONDITION MODEL
HEC-1 OUTPUT

APPENDIX D

HEC-1 OUTPUT D-1 Northeast Mesa Area, 100-year, 24-hour Storm Existing Land Use Condition **D-1**

HEC-1 OUTPUT D-2 Northwest Mesa Area, 100-year, 24-hour Storm, Existing Land Use Conditions **D-44**

HEC-1 OUTPUT D-3 Southern Mesa Area, 100-year, 24-hour Storm, Existing Land Use Conditions **D-84**

APPENDIX D-1

NORTHEAST MESA AREA
100-YEAR, 24-HOUR STORM
EXISTING LAND USE CONDITIONS
HEC-1 MODEL

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   25JUN98  TIME  08:38:39  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
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

1 HEC-1 INPUT

PAGE 1

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

   1          ID   SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
   2          ID   AREA NORTH OF SUPERSTITION FREEWAY
   3          ID
   4          ID
   5          ID   REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
   6          ID   TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS
   7          ID
   8          ID   FILENAME:  SEMP100N.DAT
   9          ID
  10          ID   THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
  11          ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.
  12          ID
  13          ID   100-YEAR 24-HOUR FREQUENCY
  14          ID
  15          ID
  16          ID   METHODOLOGY
  17          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
  18          ID   SCS TYPE II RAINFALL DISTRIBUTION
  19          ID   S-GRAPH HYDROGRAPH
  20          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
  21          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
  22          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
  23          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
  24          ID   DATED 1994
  25          ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
  26          ID
  27          ID   INITIAL STUDY PERFORMED BY LISA C. YOUNG
  28          ID   REVIEWED BY VALERIE A. SWICK
```

```
29          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
30          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
31          ID
32          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
33          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
34          ID
35          ID
36          ID    LAST UPDATED ON  3/13/98
37          ID
38          ID    UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE FAMILY HOUSING
39          ID
40          ID   DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN
            *DIAGRAM
41          IT       5  1APR97    0000    1000
42          IO       5
43          IN      15
44          JD   3.600     .01
45          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
46          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
47          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
48          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
49          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
50          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
51          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
52          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
53          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
54          PC    .983    .986    .989    .992    .995    .998   1.000
```



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

55          JD    3.58     1.0
56          JD    3.49     5.0
57          JD    3.38    10.0
58          JD    3.24    30.0
59          JD    3.10    60.0
60          JD    3.05    90.0
            *
            * DDM   ***** Updated *****

61          KK      42
62          KM   BASIN 42
63          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
64          KM    L=      3.1  Lca=      1.5   S=   60.9  Kn= .043  LAG=  51.6
65          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
66          BA    1.75
67          LG     .32     .29    5.00     .31   10.00
68          UI    114.    114.    248.    441.    618.    773.    923.   1018.   1086.   1092.
69          UI   1041.    954.    806.    673.    573.    485.    415.    340.    290.    242.
70          UI    212.    175.    147.    121.    109.     78.     78.     78.     38.     28.
71          UI     28.     28.     28.     28.     28.     28.     28.      0.      0.      0.
72          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            * DDM   ***** Preserved *****

73          KK   42T51
74          RS      10    FLOW      -1
75          RC    0.08   0.055    0.08    7000   0.011
76          RX       0     600     700     710     720     730     830    1630
77          RY      10       5       3       0       0       3       5      10
            *
            * DDM   ***** Updated *****

78          KK      51
79          KM   BASIN 51
80          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
81          KM    L=      1.5  Lca=       .8   S=   54.4  Kn= .039  LAG=  27.3
82          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
83          BA    1.24
84          LG     .29     .30    4.60     .37   18.00
```

```
 85          UI    153.    416.    885.   1248.   1446.   1410.   1128.    817.    598.    428.
 86          UI    311.    232.    163.    110.     99.     37.     37.     37.     37.     37.
 87          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 88          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

 89          KK     C51
 90          KM   COMBINE FLOWS FROM 42 AND 51
 91          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  3

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


 92          KK   51T53
 93          KM    ROUTE 51 TO 53
 94          RS       9    FLOW      -1
 95          RC    0.08   0.055    0.08    8000    0.01
 96          RX       0     100     200     210     220     230     330     430
 97          RY       7       6       5       0       0       5       6       7
             *
             * DDM   ***** Updated *****

 98          KK     44A
 99          KM   BASIN 44A
100          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
101          KM    L=      2.8  Lca=      1.4   S=   54.5  Kn= .039  LAG=  43.6
102          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
103          BA    1.59
104          LG     .20     .25    4.50     .45   45.00
105          UI    123.    123.    390.    597.    813.    994.   1114.   1180.   1153.   1063.
106          UI    881.    716.    588.    484.    397.    320.    259.    219.    189.    131.
107          UI    126.     84.     84.     75.     30.     30.     30.     30.     30.     30.
108          UI     30.     30.      0.      0.      0.      0.      0.      0.      0.      0.
109          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

110          KK  DIV44A
111          KM   DIVERT 80% OF THE LOW FLOWS WEST AND SOUTH TO 44B, 70% OF HIGH FLOWS
112          DT    D44A
113          DI       0     500    1000    3000
114          DQ       0     400     750    2100
             * DDM   ***** Updated *****

115          KK      43
116          KM   BASIN 43
117          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
118          KM    L=      1.9  Lca=       .9   S=   58.2  Kn= .036  LAG=  29.8
119          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
120          BA    1.42
121          LG     .29     .30    4.70     .35   18.00
122          UI    161.    376.    827.   1212.   1470.   1531.   1375.   1047.    783.    584.
123          UI    434.    324.    251.    171.    127.    110.     59.     39.     39.     39.
124          UI     39.      0.      0.      0.      0.      0.      0.      0.      0.      0.
125          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

126          KK     C43
127          KM     COMBINE 43 WITH DIVERTED FLOWS FROM 45A
128          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 129          KK   43T53
 130          RS      12    FLOW      -1
 131          RC    0.08   0.055    0.08   11250   0.009
 132          RX       0     200     300     310     315     325     335     535
 133          RY       6       3       2       0       0       2       3       6
              *
              * DDM   ***** Updated *****

 134          KK      53
 135          KM   BASIN 53
 136          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 137          KM    L=      1.9  Lca=       .9   S=   63.5  Kn= .039  LAG=  31.8
 138          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 139          BA     .78
 140          LG     .29     .30    5.20     .28   20.00
 141          UI     83.    189.    377.    486.    616.    903.    943.    707.    555.    428.
 142          UI    291.    149.    123.     83.     38.     25.     25.     25.      0.      0.
 143          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 144          KK     C53
 145          KM     COMBINE 53, 43 AND 51
 146          HC       3
              *
              * DDM   ***** Updated *****

 147          KK      54
 148          KM   BASIN 54
 149          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 150          KM    L=      1.5  Lca=       .8   S=   42.8  Kn= .044  LAG=  32.8
 151          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 152          BA     .49
 153          LG     .30     .29    5.40     .26   17.00
 154          UI     50.    107.    221.    287.    359.    502.    603.    449.    358.    278.
 155          UI    206.    110.     84.     55.     39.     15.     15.     15.     15.      0.
 156          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 157          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 158          KK     C54
 159          KM   COMBINE 53 AND 54
 160          HC       2
              *
              * DDM   ***** Preserved *****

 161          KK  DCAP12
 162          KM   FLOWS SPLIT AT CAP AND SOUTHERN AVE, RATING CURVES BASED ON THREE 5X7 CBCs
 163          KM   PART OF THE FLOW GOES SOUTH ACRSS SOUTHERN TO CAP 13 +14
 164          DT   SOUTH
 165          DI       0     450    1000    2500
 166          DQ       0       0     275    1025
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  5

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

 167          KK   CAP12
 168          RS       1    FLOW      -1
 169          SV       0   0.238    2.72   13.37   36.82
 170          SE  1563.6    1564    1566    1568    1570
 171          SQ       0      30     188     574    1098
              *
              * DDM   ***** Preserved *****
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172          KK   DR44A
173          KM   RETRIEVE DIVERTED FLOWS FROM 44A
174          DR    D44A
             *
             * DDM   ***** Preserved *****

175          KK   44ATB
176          KM   ROUTE 44A TO 44B, STREET AND SHEET FLOW THROUGH NEIGHBORHOODS
177          KM   NO CURB AND GUTTER
178          RS      15    FLOW      -1
179          RC   0.055   0.045   0.055    9000   0.008
180          RX       0     500    1010  1012.5  1022.5  1027.5  1532.5  2037.5
181          RY       6     5.5       3       0       0       3     5.5       6
             *
             * DDM   ***** Updated *****

182          KK     44B
183          KM   BASIN 44B
184          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
185          KM    L=      1.1  Lca=       .9   S=   64.8  Kn= .041  LAG=  26.2
186          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
187          BA    1.06
188          LG     .26     .24    6.60     .17   30.00
189          UI    136.    426.    715.    947.   1453.   1456.   1057.    775.    520.    251.
190          UI    180.    109.     42.     42.     42.      0.      0.      0.      0.      0.
191          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

192          KK    C44B
193          KM   COMBINE 44A WITH 44B
194          HC       2
             *
             * DDM   ***** Preserved *****

195          KK  CAP10+
196          KM   COMBINED CAP 10 AND 11, SAME CONTRIBUTING AREA AND HYDRAULICALLY CONNECTED
197          KM   STORAGE AND DISCHARGES WERE ADDED AT THE APPROPRIATE ELEVATIONS
198          RS       1    FLOW      -1
199          SV       0    0.43   3.397  11.626   66.53
200          SE  1562.4    1564    1566    1568    1570
201          SQ       0     180     736    1684    2754
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE   6

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


202          KK  RCAP11
203          KM   ROUTE FLOWS FROM CAP OVERCHUTE #10 AND 11 TO ADOT WEST BASIN
204          RK    2400  0.0003   0.013            TRAP      20       3
             *
             * DDM   ***** Preserved *****

205          KK     C12
206          KM   COMBINE ROUTED FLOWS FROM CAP #10 AND 11 WITH CAP #12
207          HC       2
             *
             * DDM   ***** Preserved *****

208          KK  ADOT-W
209          KM   WEST ADOT DETENTION BASIN 4189, WEST OF CAP AND NORTH OF SUPERSITION FREEWAY
210          KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
211          KM        COUNTY
212          KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
213          KM            A-N WEST, INC., FEBRUARY, 1987.
214          RS       1    ELEV      36
215          SV       0   12.35    63.5   210.3   367.5   535.1  667.85  713.55
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216          SE      36      38      40      44      48      52      55      56
217          SL    36.0   28.27      .6      .5
218          SS      55     200     2.6     1.5
             *
             * DDM   ***** Preserved *****

219          KK  RADOTW
220          KM   ROUTE FLOWS IN CONCRETE CHANNEL TO CULVERTS UNDER SUPERSTITION FREEWAY
221          RS    1.75    FLOW      -1
222          RC    .035   0.012    .035    4500   .0033
223          RX       0     500    1000    1012    1020    1032    1532    2032
224          RY      13    12.5      12       0       0      12    12.5      13
             *
             * DDM   ***** Updated *****

225          KK     36B
226          KM   BASIN 36B
227          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
228          KM    L=      1.0  Lca=       .5   S=   45.0  Kn= .028  LAG=  15.0
229          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
230          BA     .32
231          LG     .30     .29    7.30     .11   16.00
232          UI    125.    387.    715.    627.    361.    139.     58.     22.      0.      0.
233          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

234          KK    C36B
235          KM   COMBINE FLOWS FROM ADOT BASIN W WITH SUB36
236          HC       2
237          ZW     A=ADOT WEST BASIN  B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE   7

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

238          KK  RSOUTH
239          KM   RETRIEVE FLOWS CROSSING SOUTHERN AT CAP
240          DR   SOUTH
             *
             * DDM   ***** Updated *****

241          KK      57
242          KM   BASIN 57
243          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
244          KM    L=       .3  Lca=       .1   S=   35.7  Kn= .044  LAG=   9.4
245          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
246          BA     .18
247          LG     .37     .35    5.40     .25    2.00
248          UI    193.    566.    378.    149.     59.     19.      0.      0.      0.      0.
249          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

250          KK     C57
251          KM   COMBINE FLOWS CROSSING SOUTHERN AT CAP WITH THOSE OF SUBBASIN 57
252          HC       2
             *
             * DDM   ***** Preserved *****

253          KK  CAP13+
254          KM    CAP OVERCHUTES 13 AND 14 WERE COMBINED SINCE THY HAVE COMMON DRAINAGE
255          KM    STORAGE AND DISCHARGES WERE ADDED AT SPECIFIED ELEVATIONS
256          RS       1    FLOW      -1
257          SV       0   1.198   2.601   5.746
258          SE    1564    1567    1568    1570
259          SQ       0     180     500    1143
             *
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                    * DDM   ***** Updated *****

 260                KK     36A
 261                KM   BASIN 36A
 262                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 263                KM    L=        .3  Lca=        .2   S=   44.1  Kn= .028  LAG=   6.6
 264                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 265                BA     .10
 266                LG     .27      .34     6.00      .21   28.00
 267                UI    201.     435.     101.       0.      0.       0.       0.       0.       0.       0.
 268                UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *
                    * DDM   ***** Preserved *****

 269                KK    C36A
 270                KM   COMBINE FLOWS FROM CAP OVERCHUTES INTO ADOT EAST DETENTION BASIN
 271                HC       2
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE  8

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


 272                KK  ADOT-E
 273                KM   EAST ADOT DETENTION BASIN 4105, WEST OF CAP AND NORTH OF SUPERSTITION
 274                KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
 275                KM        COUNTY
 276                KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
 277                KM            A-N WEST, INC., FEBRUARY, 1987.
 278                RS       1    ELEV    49.5
 279                SV       0     300     340
 280                SE    49.5      60      61
 281                SL    49.5   28.27      .6      .5
 282                SS      60     200     2.6     1.5
 283                ZW    A=ADOT EAST BASIN B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
                    *
                    * DDM   ***** Preserved *****

 284                KK   CFAKE
 285                KM   THIS IS JUST A FAKE CONCENTRATION POINT TO ELIMINATE THE ERROR THAT SAYS TO
 286                KM   "COMBINE HYDROGRAPHS MORE OFTEN".
 287                HC       2
                    *
                    * DDM   ***** Updated *****

 288                KK      52
 289                KM   BASIN 52
 290                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 291                KM    L=       1.6  Lca=        .7   S=   54.9  Kn= .035  LAG=  25.3
 292                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 293                BA     .43
 294                LG     .31      .31     6.60      .15   12.00
 295                UI     58.     191.     311.     418.    657.     573.     419.     304.     176.      98.
 296                UI     63.      30.      18.      18.     18.       0.       0.       0.       0.       0.
 297                UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    * DDM   ***** Updated *****

 298                KK      56
 299                KM   BASIN 56
 300                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 301                KM    L=        .9  Lca=        .5   S=   57.9  Kn= .040  LAG=  20.2
 302                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 303                BA     .55
 304                LG     .31      .24     7.30      .13   20.00
 305                UI    106.     393.     593.     982.    870.     588.     362.     157.      97.      30.
 306                UI     28.      28.       0.       0.      0.       0.       0.       0.       0.       0.
 307                UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *
                    * DDM   ***** Preserved *****
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308          KK      C56
309          KM      COMBINE 52 AND 56 BEHIND THE STOCK POND
310          KM      ASSUMING STOCK POND IS EFFECTIVE, DIVERTS FLOWS SOUTH ACROSS SUPERSTITION
311          KM      STORAGE ROUTING WAS NOT PERFORMED, CHANNEL/PIPE CROSSING
312          HC        2
             *
             * DDM    ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  9

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


313          KK   56T58
314          RS       3    FLOW      -1
315          RC    0.08   0.055    0.08    2500   0.004
316          RX       0     200     300     310     320     330     430     530
317          RY       6       4       3       0       0       3       4       6
             *
             * DDM    ***** Updated *****

318          KK      58
319          KM   BASIN 58
320          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
321          KM    L=      1.1  Lca=       .5   S=   50.4  Kn= .033  LAG=  18.3
322          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
323          BA     .95
324          LG     .34     .36    5.60     .22    4.00
325          UI    238.    813.   1261.   1998.   1385.    886.    384.    213.     76.     54.
326          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
327          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM    ***** Preserved *****

328          KK      C58
329          KM   COMBINE 58 WITH 56
330          KM   THE VOLUME AT THIS CONCENTRATION POINT WILL BE SPLIT BETWEEN THE OVERCHUTES
331          KM   CAP1A AND CAP1B. THIS WILL BE MODELED AS FLAT TOP HYDROGRAPHS WITH 217 CFS
332          KM   VALUES FOR UI CARDS AT THESE OVERCHUTES
333          KM   NO DATA AVAILABLE ON CAP OVERCHUTE SIZING
334          ZW     A=CONCENTRATION POINT C58  B=FLOW TO OVERCHUTES  C=FLOW  F=OBSERVED
335          HC       2
             *
             * DDM    ***** Updated *****

336          KK      46B
337          KM   BASIN 46B
338          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
339          KM    L=      1.4  Lca=       .7   S=   42.9  Kn= .045  LAG=  31.5
340          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
341          BA     .36
342          LG     .26     .27    4.00     .55   30.00
343          UI     38.     89.    175.    225.    287.    426.    425.    321.    250.    193.
344          UI    125.     67.     54.     38.     14.     12.     12.     12.      0.      0.
345          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM    ***** Preserved *****

346          KK    CAP6
347          RS       1    FLOW      -1
348          SV       0   0.236   1.627   8.021
349          SE  1556.2    1558    1560    1562
350          SQ       0      52     180     350
             *
             * DDM    ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 10

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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351          KK   RCAP6
352          KM   ROUTE THE FLOWS FROM CAP OVERCHUTE #6 TO CRISMON ROAD (NATURAL WASH)
353          RS       3    FLOW      -1
354          RC    .045    .022    .045    1600    .002
355          RX     100     200     300     324     325     331     431     531
356          RY       6       5       4       0       0       4       5       6
             *
             * DDM   ***** Preserved *****

357          KK  RCAP6B
358          KM   ROUTE CONCENTRATION POINT CAP#6 TO SUBBASIN 29A (CRISMON CHANNEL)
359          RS       1    FLOW      -1
360          RC    .045    .013    .045    1500    .018
361          RX     100     200     300     303     318     321     421     521
362          RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Updated *****

363          KK     29A
364          KM   BASIN 29A
365          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
366          KM    L=        .9  Lca=        .4   S=   41.2  Kn= .035  LAG=  16.2
367          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
368          BA     .18
369          LG     .33     .32    4.00     .48    7.00
370          UI     60.    192.    331.    387.    233.    111.     50.     18.     12.      0.
371          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
372          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

373          KK    C29A
374          HC       2
             *
             * DDM   ***** Preserved *****

375          KK   29A-S
376          KM   DIVERT FLOWS INTO SUBBASIN 30 THAT OVERTOP THE CRISMON CHANNEL
377          DT   29A-W
378          DI       0     500    1000    5000
379          DQ       0       0     500    4500
             *
             * DDM   ***** Preserved *****

380          KK   29ATB
381          KM   ROUTE CONCENTRATION POINT 29A TO SUBBASIN 29B
382          RS     .67    FLOW      -1
383          RC     .03     .02     .03    1000    .018
384          RX     100     200     300     303     318     321     421     521
385          RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 11

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


386          KK     45A
387          KM   BASIN 45A
388          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
389          KM    L=       2.0  Lca=      1.0   S=   70.4  Kn= .036  LAG=  30.1
390          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
391          BA     .62
392          LG     .32     .32    4.00     .49    9.00
393          UI     69.    158.    350.    515.    627.    658.    598.    459.    343.    259.
394          UI    192.    142.    111.     77.     58.     47.     30.     17.     17.     17.
395          UI     17.     17.      0.      0.      0.      0.      0.      0.      0.      0.
396          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
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                 * DDM   ***** Preserved *****

397              KK    D45A
398              KM    DIVERT 75% OF THE FLOW SOUTH,THE REMAINDER ALONG UNIVERSITY TO NEXT SUBBASIN
399              KM    CHANNEL ALONG UNIVERSITY, SOME SHEET FLOW IS DIVERTED
400              DT   45ATB
401              DI       0    5000
402              DQ       0    4750
                 *
                 *
                 * DDM   ***** Updated *****

403              KK     55B
404              KM   BASIN 55B
405              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
406              KM    L=       3.5  Lca=       1.8   S=   48.6  Kn= .035  LAG=  48.0
407              KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
408              BA    1.86
409              LG     .32     .32    4.10     .48   10.00
410              UI    131.    131.    328.    562.    775.    957.   1122.   1212.   1251.   1212.
411              UI   1126.    943.    781.    656.    548.    457.    379.    312.    260.    222.
412              UI    195.    138.    138.     89.     89.     89.     45.     32.     32.     32.
413              UI     32.     32.     32.     32.     32.      0.      0.      0.      0.      0.
414              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

415              KK    C55B
416              KM   COMBINE 55B WITH DIVERTED FLOWS FROM 45A
417              HC       2
                 *
                 * DDM   ***** Preserved *****

418              KK    CAP7
419              KM   ROUTE THROUGH CAP#7
420              RS       1    FLOW      -1
421              SV       0   0.167   0.309   0.539   24.52   85.75
422              SE  1560.5    1563 1564.27    1566    1568    1570
423              SQ       0       0     225     460     756    1017
                 *
                 * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 12

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


424              KK   RCAP7
425              KM   ROUTE CAP OVERCHUTE #7 TO SUBBASIN 29B
426              RS     6.7    FLOW      -1
427              RC    .045     .04    .045    4000     .01
428              RX     100     200     300     303     308     311     411     511
429              RY       3       2       1       0       0       1       2       3
                 *
                 * DDM   ***** Updated *****

430              KK     29B
431              KM   BASIN 29B
432              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
433              KM    L=        .8  Lca=        .5   S=   52.6  Kn= .030  LAG=  13.8
434              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
435              BA     .08
436              LG     .35     .35    4.00     .46     .00
437              UI     38.    115.    208.    146.     71.     27.      8.      6.      0.      0.
438              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

439              KK   C29B1
440              KM   COMBINE FLOWS FROM CAP #7 OVERCHUTE AND C29B
441              HC       2
```

```
                    *
                    * DDM   ***** Preserved *****

442                 KK   C29B2
443                 KM   COMBINE FLOW FROM C29A AND 29B
444                 HC       2
                    *
                    * DDM   ***** Preserved *****

445                 KK   29BTC
446                 KM   ROUTE CONCENTRATION POINT 29B TO SUBBASIN 29C
447                 RS     .67    FLOW      -1
448                 RC     .03     .02      .03    1000    .018
449                 RX     100     200      300     303     318     321     421     521
450                 RY     6.5     5.5      4.5       0       0     4.5     5.5     6.5
                    *
                    * DDM   ***** Preserved *****

451                 KK   RD45A
452                 KM   RETURN DIVERTED FLOWS FROM 45A
453                 DR   45ATB
                    *
                    * DDM   ***** Preserved *****

454                 KK   45ATB
455                 KM   ROUTE REMAINDER OF FLOWS TO 45B
456                 KM   STREET FLOW AND SHEET FLOW, NO DEFINED CHANNEL
457                 RS      17    FLOW      -1
458                 RC   0.055   0.035   0.055   10000   0.008
459                 RX       0     500    1000    1005    1060    1065    1565    2065
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

460                 RY       4       3       2       1       1       2       3       4
                    *
                    * DDM   ***** Updated *****

461                 KK     45B
462                 KM   BASIN 45B
463                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
464                 KM    L=      1.9  Lca=       .9   S=   45.0  Kn= .039  LAG=  33.9
465                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
466                 BA     .66
467                 LG     .28     .31    6.00     .20   26.00
468                 UI     65.    131.    281.    364.    452.    610.    800.    621.    498.    391.
469                 UI    304.    185.    112.     90.     65.     27.     20.     20.     20.     20.
470                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
471                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

472                 KK    C45B
473                 KM   COMBINE FLOWS FROM 45A AND 45B
474                 HC       2
                    *
                    * DDM   ***** Preserved *****

475                 KK    CAP8
476                 KM   ROUTE THROUGH CAP OVERCHUTE #8
477                 RS       1    FLOW      -1
478                 SV       0   1.449   9.494   43.04
479                 SE  1562.1    1564    1566    1568
480                 SQ       0     120     436     935
                    *
                    * DDM   ***** Preserved *****

481                 KK   RCAP8
482                 KM   ROUTE CAP OVERCHUTE #8 TO SUBBASIN 29C
483                 RS     8.3    FLOW      -1
```

```
484          RC    .045     .04    .045    5000     .01
485          RX     100     200     300     303     308     311     411     511
486          RY       3       2       1       0       0       1       2       3
             *
             * DDM   ***** Updated *****

487          KK     29C
488          KM   BASIN 29C
489          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
490          KM    L=        .9  Lca=        .5   S=   58.8  Kn= .030  LAG=  14.1
491          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
492          BA     .23
493          LG     .35     .39    5.70     .20     .00
494          UI    105.    320.    587.    435.    224.     81.     29.     17.      0.      0.
495          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

496          KK   C29C1
497          KM   COMBINE FLOWS FROM CAP #8 OVERCHUTE AND 29C
498          HC       2
             *
             * DDM   ***** Preserved *****

499          KK   C29C2
500          KM   COMBINE FLOWS FROM C29B AND C29C
501          HC       2
             *
             * DDM   ***** Preserved *****

502          KK  29CT36
503          KM   ROUTE CONCENTRATION POINT 29A TO SUBBASIN 29B
504          RS     .67    FLOW      -1
505          RC    .045    .013    .045    3000    .018
506          RX     100     200     300     303     318     321     421     521
507          RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Updated *****

508          KK      55
509          KM   BASIN 55
510          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
511          KM    L=        .5  Lca=        .2   S=   72.3  Kn= .039  LAG=  10.7
512          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
513          BA     .14
514          LG     .31     .30    4.60     .36   12.00
515          UI    114.    373.    334.    153.     68.     29.     11.      0.      0.      0.
516          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

517          KK    CAP9
518          RS       1    FLOW      -1
519          SV       0    2.03  10.075  43.569
520          SE  1562.1    1564    1566    1568
521          SQ       0     120     436     935
             *
             * DDM   ***** Preserved *****

522          KK   RCAP9
523          KM   ROUTE CAP OVERCHUTE #9 TO SUBBASIN 29D
524          RS     9.6    FLOW      -1
525          RC     .04    .035     .04    5800     .02
526          RX     100     200     300     303     308     311     411     511
527          RY       3       2       1       0       0       1       2       3
             *
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                    * DDM    ***** Updated *****
                                                HEC-1 INPUT

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

 528                KK      29D
 529                KM    BASIN 29D
 530                KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 531                KM     L=       1.2  Lca=        .9   S=   40.7  Kn= .032  LAG=  23.2
 532                KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 533                BA      .65
 534                LG      .34      .34     4.90      .29    3.00
 535                UI      94.     352.     542.     773.   1113.     796.     566.     366.     168.     113.
 536                UI      53.      29.      29.       0.      0.       0.       0.       0.       0.       0.
 537                UI       0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *
                    * DDM    ***** Preserved *****

 538                KK    29T36
 539                KM    ROUTE FLOWS FROM S29 TO C36
 540                RS        9    FLOW      -1
 541                RC    0.035   0.035   0.035    4000  0.0083
 542                RX        0    1500    2000    2001    2002    2003    2503    3003
 543                RY        2      .5      .1       0       0      .1      .5       2
                    * DDM    ***** Updated *****

 544                KK      36C
 545                KM    BASIN 36C
 546                KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 547                KM     L=       1.2  Lca=        .6   S=   44.2  Kn= .029  LAG=  17.9
 548                KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 549                BA      .44
 550                LG      .32      .34     4.65      .33   11.00
 551                UI     117.     396.     622.     952.    636.     395.     165.      93.      26.      26.
 552                UI       0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
 553                UI       0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *
                    * DDM    ***** Preserved *****

 554                KK      C36
 555                KM    COMBINE FLOWS FROM D29A AND S36
 556                HC        4
                    *
                    * DDM    ***** Preserved *****

 557                KK    36T37
 558                KM    ROUTE C36 TO C37 VIA ADOT CONCRETE CHANNEL
 559                RS     1.76    FLOW      -1
 560                RC    0.035   0.013   0.035    5280  0.0033
 561                RX        0     500    1000    1012    1020    1032    1532    2032
 562                RY       13    12.5      12       0       0      12    12.5      13
                    *
                    * DDM    ***** Preserved *****
```



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

 563                KK   29AWST
 564                KM    RETRIEVE FLOWS OVERTOPPING THE CHANNEL ALONG CRISMON
 565                DR    29A-W
                    * DDM    ***** Updated *****

 566                KK       30
 567                KM    BASIN 30
 568                KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 569                KM     L=       2.0  Lca=       1.0   S=   40.0  Kn= .045  LAG=  41.8
 570                KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
571          BA    1.12
572          LG     .27     .28    4.00     .54   26.00
573          UI     90.    106.    322.    438.    520.    621.    764.   1077.   1034.    818.
574          UI    690.    566.    464.    357.    211.    155.    135.     90.     71.     28.
575          UI     28.     28.     28.     28.      0.      0.      0.      0.      0.      0.
576          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

577          KK     C30
578          KM   COMBINE 30 WITH DIVERTED FLOWS ALONG CRISMON
579          HC       2
             * DDM   ***** Preserved *****

580          KK   30T37
581          KM   ROUTE FLOWS FROM S30 TO C37 VIA NATURAL CHANNEL
582          RS     4.4    FLOW      -1
583          RC   0.040   0.035   0.040    2640   0.053
584          RX       0       2       3       4       7       8      28     528
585          RY       6       5       5       0       0       4     4.5       5
             * DDM   ***** Updated *****

586          KK      37
587          KM   BASIN 37
588          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
589          KM    L=      1.0  Lca=       .5   S=   45.0  Kn= .028  LAG=  15.0
590          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
591          BA     .47
592          LG     .31     .33    4.00     .49   14.00
593          UI    184.    569.   1051.    922.    531.    204.     85.     32.      0.      0.
594          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

595          KK     C37
596          KM   COMBINE FLOWS FROM S37, S30, AND C36 AT C37
597          HC       3
             *
             * DDM   ***** Preserved *****
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                                    HEC-1 INPUT

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

598          KK  ADOTEL
599          KM   ADOT DETENTION BASIN 4313 AT ELLSWORTH RD. AND SUPERSTITION
600          KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
601          KM        COUNTY
602          KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
603          KM            A-N WEST, INC., FEBRUARY, 1987.
604          RS       1    ELEV      56
605          SV       0     617     650
606          SE      56      74      75
607          SL      56    3.14     0.6     .05
608          SS      74     200     2.6     1.5
             *
             * DDM   ***** Preserved *****

609          KK   37T38
610          KM   ROUTE FLOWS FROM C37 TO C38 VIA ADOT CONCRETE CHANNEL
611          RS    1.76    FLOW      -1
612          RC   0.035   0.012   0.035    5280  0.0045
613          RX       0     500    1000    1012    1020    1032    1532    2032
614          RY      13    12.5      12       0       0      12    12.5      13
             *
             * DDM   ***** Updated *****

615          KK     17A
616          KM   BASIN 17A
617          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
618          KM    L=       .7  Lca=       .5   S=   60.6  Kn= .042  LAG=  18.5
```

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619          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
620          BA     .18
621          LG     .26     .28    4.00     .55   33.00
622          UI     44.    151.    233.    375.    265.    171.     77.     42.     16.     10.
623          UI     10.      0.      0.      0.      0.      0.      0.      0.      0.      0.
624          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

625          KK  17AT23
626          KM   ROUTE FLOWS FROM 17 TO 23 VIA DIRT CHANNEL, THEN NATURAL WASH
627          RS       3    FLOW      -1
628          RC   0.045   0.032   0.045    2600   0.015
629          RX       0     100     133     137     142     147     200     300
630          RY       5       4     3.5       0       0     3.5       4       5
             *
             * DDM   ***** Updated *****

631          KK      23
632          KM   BASIN 23
633          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
634          KM    L=      1.0  Lca=       .3   S=   65.0  Kn= .038  LAG=  16.2
635          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
636          BA     .28
637          LG     .28     .30    4.00     .53   20.00
638          UI     92.    296.    509.    595.    357.    170.     77.     28.     18.      0.
639          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1                                                HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

640          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Updated *****

641          KK      48
642          KM   BASIN 48
643          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
644          KM    L=      1.6  Lca=       .8   S=   80.2  Kn= .038  LAG=  26.4
645          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
646          BA     .77
647          LG     .31     .31    4.10     .49   12.00
648          UI     98.    305.    517.    682.   1035.   1076.    777.    573.    390.    190.
649          UI    136.     85.     30.     30.     30.      0.      0.      0.      0.      0.
650          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

651          KK    CAP3
652          RS       1    FLOW      -1
653          SV       0   0.934   1.222   4.303   13.13
654          SE  1564.6  1567.5    1568    1570    1572
655          SQ       0       0     143     750    1530
             *
             * DDM   ***** Preserved *****

656          KK  RCAP3A
657          KM   ROUTE CAP OVERCHUTE #3 TO APACHE TRAIL (ALONG NATURAL CHANNEL)
658          RS     3.3    FLOW      -1
659          RC    .055    .045    .055    2000    .020
660          RX     100     200     300     305     310     315     415     515
661          RY       7       6       5       0       0       5       6       7
             *
             * DDM   ***** Preserved *****

662          KK  RCAP3B
663          KM   ROUTE CAP OVERCHUTE #3 FROM APACHE TRAIL TO 17B
664          RS       1    FLOW      -1
665          RC    .045    .035    .045    2300     .01
666          RX     100     200     300     301     311     312     412     512
```

```
667          RY       3       2       1       0       0       1       2       3
             *
             * DDM   ***** Updated *****

668          KK     17B
669          KM   BASIN 17B
670          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
671          KM    L=        .8  Lca=        .6   S=   50.0  Kn= .042  LAG=  21.2
672          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
673          BA     .22
674          LG     .26     .28    4.00     .54   30.00
675          UI     37.    146.    220.    348.    372.    252.    169.     77.     47.     23.
676          UI     11.     11.      0.      0.      0.      0.      0.      0.      0.      0.
677          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


678          KK    C17B
679          KM    COMBINE FLOWS FROM CAP OVERCHUTE #3 AND S17B
680          HC       2
             * DDM   ***** Preserved *****

681          KK  17BT22
682          KM   ROUTE FLOWS FROM S17 TO C22 VIA LINED CHANNEL
683          RS       3    FLOW      -1
684          RC   0.035   0.015   0.035    2700  0.0114
685          RX       0       1       3       6      18      21      36      70
686          RY    6.25    6.10       6       0       0       3    3.25     3.5
             *
             * DDM   ***** Updated *****

687          KK      47
688          KM   BASIN 47
689          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
690          KM    L=       3.0  Lca=      1.5   S=   51.2  Kn= .037  LAG=  44.8
691          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
692          BA    1.67
693          LG     .32     .32    4.00     .49    8.00
694          UI    126.    126.    418.    569.    691.    804.    959.   1272.   1579.   1302.
695          UI   1079.    920.    765.    631.    492.    300.    218.    205.    126.    126.
696          UI     42.     39.     39.     39.     39.     39.      0.      0.      0.      0.
697          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

698          KK  CAP4+5
699          KM   ROUTE THROUGH OVERCHUTES 4 AND 5, HUYDRAULICALLY CONNECTED
700          KM   STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
701          RS       1    FLOW      -1
702          SV       0   0.081   0.483   4.779   39.02  121.88
703          SE  1568.3    1570    1572    1574    1576    1578
704          SQ       0     170     575    1085    1245    1410
             *
             * DDM   ***** Preserved *****

705          KK   RCAP4
706          KM   ROUTE CAP OVERCHUTE #4 AND #5 TO SUBBASIN 22
707          RS      10    FLOW      -1
708          RC     .05    .045     .05    6000    .005
709          RX     100     200     300     304     310     314     414     514
710          RY       6       5       4       0       0       4       5       6
             *
             * DDM   ***** Updated *****

711          KK      22
712          KM   BASIN 22
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 713          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 714          KM    L=       1.2  Lca=        .3   S=   51.3  Kn= .041  LAG=  19.5
 715          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 716          BA     .41
 717          LG     .27     .28    4.00     .54   29.00
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 718          UI     86.    310.    470.    782.    624.    415.    227.    109.     56.     21.
 719          UI     21.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 720          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 721          KK    C22A
 722          KM   COMBINE FLOWS FROM CAP OVERCHUTES 4 & 5 AND SUBBASIN 22
 723          HC       2
              * DDM   ***** Preserved *****

 724          KK     C22
 725          KM   COMBINE S17B AND S22
 726          HC       2
              * DDM   ***** Preserved *****

 727          KK   22T23
 728          KM   ROUTE C22 TO C23 VIA CONCRETE CHANNEL
 729          KM   VELOCITY = 5FT/S
 730          RS       2    FLOW      -1
 731          RC   0.045   0.022   0.042    2640   0.001
 732          RX       0     102     103     106    1021     124     128     270
 733          RY       7     6.5       6       0       0       3       5       7
              *
              * DDM   ***** Preserved *****

 734          KK     C23
 735          KM   COMBINE FLOWS FROM C22, C17A, AND S23 AT C23
 736          HC       3
              * DDM   ***** Preserved *****

 737          KK   23T24
 738          KM   ROUTE FLOWS FROM C23 TO C24 VIA CONCRETE LINED CHANNEL
 739          RS       2    FLOW      -1
 740          RC   0.045   0.022   0.045    2640  0.0117
 741          RX       0       2       3       6      21      24      26      70
 742          RY       6       6       6       0       0       3       5       6
              *
              * DDM   ***** Updated *****

 743          KK      49
 744          KM   BASIN 49
 745          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 746          KM    L=       1.6  Lca=        .8   S=   73.6  Kn= .040  LAG=  28.4
 747          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 748          BA     .79
 749          LG     .30     .30    4.15     .48   14.00
 750          UI     94.    257.    467.    603.    836.   1129.    839.    643.    482.    296.
 751          UI    161.    117.     74.     29.     29.     29.      0.      0.      0.      0.
 752          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 753          KK    CAP2
 754          RS       1    FLOW      -1
 755          SV       0    0.02   0.538   2.545  13.729
 756          SE  1565.1    1566    1568    1570    1572
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757          SQ       0      60     340     807    1395
             *
             * DDM   ***** Preserved *****

758          KK   RCAP2
759          KM   ROUTE CAP OVERCHUTE #2 ACROSS ELLSWORTH ROAD TO 18A
760          RS      10    FLOW      -1
761          RC    .045    .040    .045    7500    .012
762          RX     100     200     300     316     321     329     429     529
763          RY       6       5       3       0       0       3       5       6
             *
             * DDM   ***** Updated *****

764          KK      50
765          KM   BASIN 50
766          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
767          KM    L=        .9  Lca=        .4   S=   81.4  Kn= .037  LAG=  15.8
768          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
769          BA     .28
770          LG     .33     .31    4.00     .49    5.00
771          UI     97.    306.    543.    575.    342.    149.     71.     21.     18.      0.
772          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
773          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

774          KK    CAP1
775          RS       1    FLOW      -1
776          SV       0   0.091   0.575   3.319  13.256
777          SE    1566    1568    1570    1572    1574
778          SQ       5      90     275     470     610
             *
             * DDM   ***** Preserved *****

779          KK   RCAP1
780          KM   ROUTE CAP OVERCHUTE #1 TO SUBBASIN 18A
781          RS      11    FLOW      -1
782          RC     .05    .045     .05    7000     .02
783          RX     100     200     300     301     303     304     404     505
784          RY       6       5       2       0       0       2       5       6
             *
             * DDM   ***** Updated *****

785          KK     18A
786          KM   BASIN 18A
787          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
788          KM    L=       1.0  Lca=        .5   S=   60.6  Kn= .044  LAG=  22.6
789          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
790          BA    1.01
791          LG     .28     .29    4.10     .52   19.00
```



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                                          HEC-1 INPUT

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

792          UI    150.    582.    884.   1306.   1736.   1211.    851.    501.    255.    157.
793          UI     57.     46.     46.      0.      0.      0.      0.      0.      0.      0.
794          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

795          KK    C18A
796          KM   COMBINE FLOWS FROM CAP OVERCHUTE #1 AND CAP #2 AND SUBBASIN 18A
797          HC       3
             * DDM   ***** Preserved *****

798          KK   18T24
799          KM   ROUTE FLOWS FROM S18 TO C24 VIA HAWES ROAD
800          RS       2    FLOW      -1
801          RC   0.035   0.022   0.035    2640   0.006
802          RX       0    1005    1009    1010    1041    1042    1044    2049
```

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803          RY       3     2.5     1.5       0       0     1.5     2.5       3
             * DDM   ***** Updated *****

804          KK      24
805          KM   BASIN 24
806          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
807          KM    L=        .9  Lca=        .5   S=   43.5  Kn= .047  LAG=  24.6
808          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
809          BA     .29
810          LG     .23     .26    4.00     .58   38.00
811          UI     40.    138.    220.    300.    469.    376.    275.    195.    100.     63.
812          UI     40.     12.     12.     12.      0.      0.      0.      0.      0.      0.
813          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

814          KK     C24
815          KM   COMBINE FLOWS FROM C23, S18A AND S24
816          HC       3
             * DDM   ***** Preserved *****

817          KK  24T31A
818          KM   ROUTE FLOWS FROM C24 TO C31 VIA HAWES ROAD
819          RS       6    FLOW      -1
820          RC   0.040   0.040   0.040    2640  0.0044
821          RX       0    1000    1012    1013    1017    1018    1518    2018
822          RY       4       3       3       0       0       7     7.5       8
             * DDM   ***** Preserved *****

823          KK  24T31B
824          KM   ROUTE FLOWS FROM C24 TO C31 VIA NATURAL CHANNEL
825          RS     4.4    FLOW      -1
826          RC   0.040   0.035   0.040    2640  0.0044
827          RX       0    1000    1020    1024    1036    1040    1070    2070
828          RY      15      14       4       0       0       4      19      20
             *
             * DDM   ***** Updated *****
```

1
PAGE 23

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

829          KK     31B
830          KM   BASIN 31B
831          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
832          KM    L=       1.2  Lca=        .5   S=   29.7  Kn= .038  LAG=  23.9
833          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
834          BA     .47
835          LG     .31     .32    4.45     .39   11.00
836          UI     66.    239.    375.    521.    790.    593.    429.    293.    139.     92.
837          UI     52.     20.     20.     20.      0.      0.      0.      0.      0.      0.
838          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

839          KK     C31
840          KM   COMBINE FLOWS FROM C24  WITH S31A AND S31B
841          HC       2
             *
             * DDM   ***** Preserved *****

842          KK     D31
843          KM   DIVERT FLOWS AT THE SPLITTER BOX AT HAWES AND SOUTHERN TO SOSS. CHANNEL/BASIN
844          DT    D31W
845          DI       0     300    1000   10000
846          DQ       0       0     700    9700
             * DDM   ***** Preserved *****

847          KK   31T38
848          KM     ROUTE FLOWS FROM S31 TO C38 VIA  CONCRETE CHANNEL ALONG HAWES
849          RS     .88    FLOW      -1
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850          RC    .035    .012    .035    2640    .003
851          RX       0       3       7      10      15      18      21      24
852          RY       5       5       5       0       0       5       5       5
             * DDM   ***** Updated *****

853          KK     31A
854          KM   BASIN 31A
855          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
856          KM    L=      1.0  Lca=       .5   S=   43.3  Kn= .042  LAG=  22.5
857          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
858          BA     .53
859          LG     .29     .29    4.15     .50   18.00
860          UI     80.    312.    472.    702.    919.    639.    448.    259.    135.     81.
861          UI     28.     25.     25.      0.      0.      0.      0.      0.      0.      0.
862          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

863          KK  31AT38
864          KM   ROUTE S31A TO 38
865          RS       6    FLOW      -1
866          RC     .04     .03     .04    3500    .012
867          RX     100     200     300     302     307     309     409     509
868          RY       4       3       2       0       0       2       3       4
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 24

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

869          KK      38
870          KM   BASIN 38
871          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
872          KM    L=      1.1  Lca=       .8   S=   37.0  Kn= .040  LAG=  27.8
873          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
874          BA     .47
875          LG     .25     .29    4.25     .49   31.00
876          UI     57.    161.    288.    374.    532.    673.    491.    373.    275.    153.
877          UI     96.     62.     34.     17.     17.     17.      0.      0.      0.      0.
878          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

879          KK     C38
880          KM   COMBINE FLOWS FROM S38, C37 AND D31A AND B AT C38
881          HC       4
             * DDM   ***** Preserved *****

882          KK   38T39
883          KM   ROUTE FLOWS FROM C38 TO C39 VIA CONCRETE CHANNEL
884          RS    1.32    FLOW      -1
885          RC   0.035   0.012   0.035    3960  0.0066
886          RX       0     500    1000    1012    1020    1032    1532    2032
887          RY      13    12.5      12       0              12    12.5      13
             * ADOT DETENTION BASINS FROM URS REPORT SEPT 1988
             * DDM   ***** Preserved *****

888          KK   ADD10
889          KM    BASIN #10 - OFF-LINE DETENTION POND TO ATTENUATE PEAK FLOWS
890          KM     BUT DO NOT DELAY THE PEAK
891          DT    DB10
892          DI     807     879     961    1070    1190    1320
893          DQ       0      29      61     120     190     270
             * DDM   ***** Preserved *****

894          KK    ADD9
895          KM   BASIN #9 - OFF-LINE DETENTION POND
896          DT     DB9
897          DI     626     660     751     861     987    1128
898          DQ       0      10      51     110     189     278
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                    * DDM   ***** Preserved *****

899                 KK    ADD8
900                 KM   BASIN #8 - OFF-LINE DETENTION POND
901                 DT     DB8
902                 DI     464     521     627     752     898
903                 DQ       0      21      77     152     248
                    * DDM   ***** Preserved *****

904                 KK    ADD7
905                 KM   BASIN #7 - OFF-LINE DETENTION POND
906                 DT     DB7
907                 DI     770     810     892     988    1093    1207    1331    1462
908                 DQ       0      10      42      88     143     207     281     362
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 25

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


909                 KK    ADD6
910                 KM   BASIN #6 - OFF-LINE DETENTION POND
911                 DT     DB6
912                 DI     685     703     781     875     978    1092    1215
913                 DQ       0       3      31      75     128     192     265
                    * DDM   ***** Preserved *****

914                 KK    ADD5
915                 KM   BASIN #5 - OFF-LINE DETENTION POND
916                 DT     DB5
917                 DI    1005    1063    1141    1227    1320    1421    1527
918                 DQ       0      13      41      77     120     171     227
                    * DDM   ***** Preserved *****

919                 KK    D31W
920                 KM   RETRIEVE DIVERTED HYDROGRAPH D31A
921                 DR    D31W
                    *
                    * DDM   ***** Preserved *****

922                 KK  31WT32
923                 KM   ROUTE FLOWS FROM D31A TO C32
924                 RS    1.76    FLOW      -1
925                 RC    .035    .022    .035    5280   .0027
926                 RX       0    2005    2012    2012    2106    2106    2113    3122
927                 RY     4.5     4.5     3.5       0       0     3.5     4.5     4.5
                    *
                    * DDM   ***** Updated *****

928                 KK      32
929                 KM   BASIN 32
930                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
931                 KM    L=        .9  Lca=        .5   S=   38.9  Kn= .055  LAG=  29.1
932                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
933                 BA     .38
934                 LG     .23     .25    4.55     .44   27.00
935                 UI     43.    115.    212.    273.    368.    529.    407.    314.    237.    161.
936                 UI     81.     62.     43.     14.     13.     13.     13.      0.      0.      0.
937                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

938                 KK     C32
939                 KM    COMBINE SOSSAMAN CHANNEL FLOWS WITH FLOWS FROM 32
940                 HC       2
                    *
                    * DDM   ***** Preserved *****

941                 KK   32T39
942                 KM   ROUTE FLOWS FROM C32 TO C39
```

```
943          RS    0.88    FLOW      -1
944          RC   0.012   0.012   0.012    2640   0.004
945          RX       0       5      10      28      38      60      65      70
946          RY      14      14      14       0       0      14      14      14
             * DDM   ***** Updated *****
1                                                HEC-1 INPUT
PAGE 26

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


947          KK      39
948          KM   BASIN 39
949          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
950          KM    L=        .9  Lca=        .7   S=   38.0  Kn= .057  LAG=  34.2
951          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
952          BA     .36
953          LG     .23     .26    4.60     .41   40.00
954          UI     35.     69.    150.    194.    241.    319.    434.    339.    272.    215.
955          UI    168.    107.     61.     51.     35.     18.     11.     11.     11.     11.
956          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
957          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

958          KK     C39
959          KM   COMBINE FLOWS FROM C32, C38 AND S39 AT C39
960          HC       3
             *
             * DDM   ***** Preserved *****

961          KK    SOSS
962          KM   THIS WAS FORMERLY CALLED CHANNEL
963          KM   DIVERT FLOWS IN EXCESS OF 1800 CFS TO SOSSAMAN DET. BASIN
964          KM   IN REALITY, BACKWATER FROM THE ADOT CROSSING DETERMINES THE AMOUNT OF SPILL
965          KM   SUPERSTITION FREEWAY
966          ZW    A=SOSSAMAN DRAIN  B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
967          DT   BASIN
968          DI       0    1800    2000   10000
969          DQ       0       0     200    8200
970          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   61          42
                V
                V
   73       42T51
                .
                .
   78           .          51
                .           .
                .           .
   89         C51............
                V
                V
   92       51T53
                .
                .
   98           .         44A
                .           .
                .           .
  112           .           .------->    D44A
  110           .      DIV44A
                .           .
                .           .
  115           .           .        43
                .           .         .
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                .          .          .
126             .        C43...........
                .          V
                .          V
129             .      43T53
                .          .
                .          .
134             .          .         53
                .          .          .
                .          .          .
144           C53......................
                .
                .
147             .         54
                .          .
                .          .
158           C54............
                .
                .
164             .-------->   SOUTH
161       DCAP12
               V
               V
167        CAP12
                .
                .
174             .          .<-------    D44A
172             .      DR44A
                .          V
                .          V
175             .      44ATB
                .          .
                .          .
182             .          .        44B
                .          .          .
                .          .          .
192             .       C44B...........
                .          V
                .          V
195             .     CAP10+
                .          V
                .          V
202             .     RCAP11
                .          .
                .          .
205           C12............
               V
               V
208       ADOT-W
               V
               V
219       RADOTW
                .
                .
225             .        36B
                .          .
                .          .
234         C36B............
                .
                .
240             .          .<-------   SOUTH
238             .     RSOUTH
                .          .
                .          .
241             .          .         57
                .          .          .
                .          .          .
250             .        C57...........
                .          V
                .          V
253             .     CAP13+
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                .           .
                .           .
260             .           .          36A
                .           .           .
                .           .           .
269             .       C36A.............
                .           V
                .           V
272             .      ADOT-E
                .           .
                .           .
284         CFAKE............
                .
                .
288             .          52
                .           .
                .           .
298             .           .          56
                .           .           .
                .           .           .
308             .         C56.............
                .           V
                .           V
313             .       56T58
                .           .
                .           .
318             .           .          58
                .           .           .
                .           .           .
328             .         C58.............
                .           .
                .           .
336             .           .         46B
                .           .           V
                .           .           V
346             .           .        CAP6
                .           .           V
                .           .           V
351             .           .       RCAP6
                .           .           V
                .           .           V
357             .           .      RCAP6B
                .           .           .
                .           .           .
363             .           .           .          29A
                .           .           .           .
                .           .           .           .
373             .           .        C29A.............
                .           .           .
                .           .           .
377             .           .           .-------->   29A-W
375             .           .       29A-S
                .           .           V
                .           .           V
380             .           .       29ATB
                .           .           .
                .           .           .
386             .           .           .          45A
                .           .           .           .
                .           .           .           .
400             .           .           .           .-------->   45ATB
397             .           .           .         D45A
                .           .           .           .
                .           .           .           .
403             .           .           .           .          55B
                .           .           .           .           .
                .           .           .           .           .
415             .           .           .         C55B.............
                .           .           .           V
                .           .           .           V
418             .           .           .         CAP7
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                                  V
                                  V
424                            RCAP7
                                  .
                                  .
430                               .          29B
                                  .            .
                                  .            .
439                            C29B1............
                                  .
                                  .
442                     C29B2............
                           V
                           V
445                     29BTC
                              .
                              .
453                           .<-------   45ATB
451                            RD45A
                                  V
                                  V
454                            45ATB
                                  .
                                  .
461                               .          45B
                                  .            .
                                  .            .
472                             C45B............
                                  V
                                  V
475                             CAP8
                                  V
                                  V
481                            RCAP8
                                  .
                                  .
487                               .          29C
                                  .            .
                                  .            .
496                            C29C1............
                                  .
                                  .
499                     C29C2............
                           V
                           V
502                     29CT36
                              .
                              .
508                             55
                                  V
                                  V
517                             CAP9
                                  V
                                  V
522                            RCAP9
                                  .
                                  .
528                               .          29D
                                  .            V
                                  .            V
538                               .        29T36
                                  .            .
                                  .            .
544                               .            .          36C
                                  .            .            .
                                  .            .            .
554                       C36.................................
                           V
                           V
557                     36T37
                              .
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565                                  .<-------   29A-W
563                              29AWST
                                     .
                                     .
566                                  .          30
                                     .           .
                                     .           .
577                                C30............
                                     V
                                     V
580                              30T37
                                     .
                                     .
586                                  .          37
                                     .           .
                                     .           .
595                        C37......................
                             V
                             V
598                      ADOTEL
                             V
                             V
609                       37T38
                                 .
                                 .
615                                17A
                                     V
                                     V
625                              17AT23
                                     .
                                     .
631                                  .          23
                                     .           .
                                     .           .
641                                  .           .          48
                                     .           .           V
                                     .           .           V
651                                  .           .         CAP3
                                     .           .           V
                                     .           .           V
656                                  .           .       RCAP3A
                                     .           .           V
                                     .           .           V
662                                  .           .       RCAP3B
                                     .           .           .
                                     .           .           .
668                                  .           .           .          17B
                                     .           .           .           .
                                     .           .           .           .
678                                  .           .         C17B...........
                                     .           .           V
                                     .           .           V
681                                  .           .       17BT22
                                     .           .           .
                                     .           .           .
687                                  .           .           .           47
                                     .           .           .            V
                                     .           .           .            V
698                                  .           .           .       CAP4+5
                                     .           .           .            V
                                     .           .           .            V
705                                  .           .           .        RCAP4
                                     .           .           .           .
                                     .           .           .           .
711                                  .           .           .           .           22
                                     .           .           .           .            .
                                     .           .           .           .            .
721                                  .           .           .        C22A............
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724                                                  C22............
                                                       V
                                                       V
727                                                 22T23
                                                       .
                                                       .
734                                  C23.......................
                                       V
                                       V
737                                 23T24
                                       .
                                       .
743                                                   49
                                                       V
                                                       V
753                                                 CAP2
                                                       V
                                                       V
758                                                RCAP2
                                                       .
                                                       .
764                                                    .          50
                                                       .           V
                                                       .           V
774                                                    .         CAP1
                                                       .           V
                                                       .           V
779                                                    .        RCAP1
                                                       .           .
                                                       .           .
785                                                    .           .          18A
                                                       .           .            .
                                                       .           .            .
795                                                 C18A.......................
                                                       V
                                                       V
798                                                18T24
                                                       .
                                                       .
804                                                    .          24
                                                       .           .
                                                       .           .
814                                  C24.......................
                                       V
                                       V
817                                 24T31A
                                       V
                                       V
823                                 24T31B
                                       .
                                       .
829                                                   31B
                                       .             .
                                       .             .
839                                  C31............
                                       .
                                       .
844                                    .-------->   D31W
842                                  D31
                                       V
                                       V
847                                 31T38
                                       .
                                       .
853                                                   31A
                                       .               V
                                       .               V
863                                                31AT38
                                       .               .
                                       .               .
869                                    .               .          38
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                .          .          .          .          .          .
                .          .          .          .          .          .
879             .          .        C38.......................................
                .          .          V
                .          .          V
882             .          .      38T39
                .          .          .
                .          .          .
891             .          .          .------->    DB10
888             .          .      ADD10
                .          .          .
                .          .          .
896             .          .          .------->     DB9
894             .          .       ADD9
                .          .          .
                .          .          .
901             .          .          .------->     DB8
899             .          .       ADD8
                .          .          .
                .          .          .
906             .          .          .------->     DB7
904             .          .       ADD7
                .          .          .
                .          .          .
911             .          .          .------->     DB6
909             .          .       ADD6
                .          .          .
                .          .          .
916             .          .          .------->     DB5
914             .          .       ADD5
                .          .          .
                .          .          .
921             .          .          .           .<-------    D31W
919             .          .          .        D31W
                .          .          .           V
                .          .          .           V
922             .          .          .      31WT32
                .          .          .           .
                .          .          .           .
928             .          .          .           .          32
                .          .          .           .           .
                .          .          .           .           .
938             .          .          .         C32............
                .          .          .           V
                .          .          .           V
941             .          .          .       32T39
                .          .          .           .
                .          .          .           .
947             .          .          .           .          39
                .          .          .           .           .
                .          .          .           .           .
958             .          .       C39........................
                .          .          .
                .          .          .
967             .          .          .------->   BASIN
961             .          .       SOSS
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUL   1997              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   25JUN98  TIME  08:38:39  *
*                                      *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
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SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
AREA NORTH OF SUPERSTITION FREEWAY

REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS

FILENAME: SEMP100N.DAT

THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.

100-YEAR 24-HOUR FREQUENCY

METHODOLOGY
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
DATED 1994
THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS

INITIAL STUDY PERFORMED BY LISA C. YOUNG
REVIEWED BY VALERIE A. SWICK
HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL

LAST UPDATED ON 3/13/98

UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE FAMILY HOUSING

DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN

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

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE     1APR97  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     4APR97  ENDING DATE
                    NDTIME       1115  ENDING TIME
                     ICENT         19  CENTURY MARK

               COMPUTATION INTERVAL     .08 HOURS
                    TOTAL TIME BASE   83.25 HOURS
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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

 44 JD          INDEX STORM NO. 1
                      STRM        3.60  PRECIPITATION DEPTH
                      TRDA         .01  TRANSPOSITION DRAINAGE AREA

 45 PI            PRECIPITATION PATTERN
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 55 JD          INDEX STORM NO. 2
                      STRM        3.58  PRECIPITATION DEPTH
                      TRDA        1.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
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56 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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57 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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58 JD INDEX STORM NO. 5

STRM 3.24 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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59 JD INDEX STORM NO. 6

STRM 3.10 PRECIPITATION DEPTH

TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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  60 JD          INDEX STORM NO. 7
                       STRM        3.05  PRECIPITATION DEPTH
                       TRDA       90.00  TRANSPOSITION DRAINAGE AREA

   0 PI            PRECIPITATION PATTERN
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WARNING --- ROUTED OUTFLOW (   1120.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1159.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1192.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1215.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1230.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1235.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1233.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1223.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1207.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1185.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1155.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1115.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1113.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1152.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1184.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (   1207.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1222.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1227.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1225.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1216.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1200.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1177.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1148.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1108.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1117.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1148.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1171.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1185.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1191.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1189.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1180.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1165.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1143.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1114.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1104.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1126.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1140.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1146.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1145.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1137.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1122.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1101.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE
   -----DSS---ZOPEN:  Existing File Opened,  File: SEMP100N.DSS
                      Unit:  71;  DSS Version: 6-EA
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/31MAR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/01APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/02APR1997/5MIN/OBSERVED/
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 -----DSS---ZWRITE Unit  71; Vers.    4:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/03APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/04APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   19:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   19:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   20:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   20:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   21:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   21:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   22:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   22:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   23:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   23:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   24:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   24:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                             42     1048.   12.58      206.        56.         19.       1.75

          ROUTED TO
+                           42T51     962.   13.17      206.        56.         19.       1.75

          HYDROGRAPH AT
+                             51     1277.   12.25      159.        46.         15.       1.24

          2 COMBINED AT
+                            C51     1420.   12.33      359.       100.         34.       2.99

          ROUTED TO
+                           51T53    1129.   13.08      359.       100.         34.       2.99

          HYDROGRAPH AT
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+	44A	1297.	12.50	277.	89.	30.	1.59
+ DIVERSION TO	D44A	951.	12.50	213.	69.	23.	1.59
+ HYDROGRAPH AT	DIV44A	347.	12.50	64.	20.	7.	1.59
+ HYDROGRAPH AT	43	1365.	12.33	184.	53.	18.	1.42
+ 2 COMBINED AT	C43	1646.	12.33	244.	72.	24.	3.01
+ ROUTED TO	43T53	1104.	13.42	244.	72.	24.	3.01
+ HYDROGRAPH AT	53	831.	12.42	108.	31.	11.	.78
+ 3 COMBINED AT	C53	2157.	13.33	684.	196.	66.	6.78
+ HYDROGRAPH AT	54	512.	12.42	66.	19.	6.	.49
+ 2 COMBINED AT	C54	2173.	13.33	743.	213.	71.	7.27
+ DIVERSION TO	SOUTH	862.	13.33	235.	59.	20.	7.27
+ HYDROGRAPH AT	DCAP12	1312.	13.33	508.	154.	52.	7.27
+ ROUTED TO	CAP12	1166.	13.67	508.	154.	52.	7.27
+ HYDROGRAPH AT	DR44A	951.	12.50	213.	69.	23.	1.59
+ ROUTED TO	44ATB	769.	13.58	213.	69.	23.	1.59
+ HYDROGRAPH AT	44B	1430.	12.25	179.	54.	18.	1.06
+ 2 COMBINED AT	C44B	1606.	12.25	393.	123.	41.	1.06
+ ROUTED TO	CAP10+	1490.	12.33	393.	123.	41.	1.06
+ ROUTED TO	RCAP11	1490.	12.42	393.	123.	41.	1.06
+ 2 COMBINED AT	C12	2146.	12.50	874.	269.	90.	8.33
+ ROUTED TO	ADOT-W	439.	15.17	414.	263.	90.	8.33
+ ROUTED TO	RADOTW	438.	15.25	414.	263.	90.	8.33
+ HYDROGRAPH AT	36B	581.	12.08	49.	14.	5.	.32
+ 2 COMBINED AT	C36B	745.	12.08	421.	275.	94.	8.65

+	HYDROGRAPH AT RSOUTH	862.	13.33	235.	59.	20.	7.27
+	HYDROGRAPH AT 57	318.	12.00	19.	5.	2.	.18
+	2 COMBINED AT C57	941.	13.33	277.	69.	23.	.18
+	ROUTED TO CAP13+	931.	13.33	277.	69.	23.	.18
+	HYDROGRAPH AT 36A	215.	12.00	15.	4.	1.	.10
+	2 COMBINED AT C36A	934.	13.33	292.	74.	25.	.28
+	ROUTED TO ADOT-E	267.	14.25	200.	73.	25.	.28
+	2 COMBINED AT CFAKE	771.	12.08	594.	339.	116.	8.93
+	HYDROGRAPH AT 52	572.	12.25	61.	17.	6.	.43
+	HYDROGRAPH AT 56	862.	12.17	88.	25.	8.	.55
+	2 COMBINED AT C56	1400.	12.25	149.	42.	14.	.98
+	ROUTED TO 56T58	1068.	12.50	149.	42.	14.	.98
+	HYDROGRAPH AT 58	1370.	12.17	107.	28.	9.	.95
+	2 COMBINED AT C58	1813.	12.25	252.	68.	23.	1.93
+	HYDROGRAPH AT 46B	360.	12.42	51.	16.	5.	.36
+	ROUTED TO CAP6	262.	12.58	51.	16.	5.	.36
+	ROUTED TO RCAP6	260.	12.67	51.	16.	5.	.36
+	ROUTED TO RCAP6B	260.	12.67	51.	16.	5.	.36
+	HYDROGRAPH AT 29A	245.	12.17	18.	5.	2.	.18
+	2 COMBINED AT C29A	355.	12.17	68.	20.	7.	.54
+	DIVERSION TO 29A-W	0.	.00	0.	0.	0.	.54
+	HYDROGRAPH AT 29A-S	355.	12.17	68.	20.	7.	.54
+	ROUTED TO 29ATB	353.	12.17	68.	20.	7.	.54
+	HYDROGRAPH AT 45A	512.	12.33	63.	17.	6.	.62

+	DIVERSION TO	45ATB	487.	12.33	60.	16.	5.	.62
+	HYDROGRAPH AT	D45A	26.	12.33	3.	1.	0.	.62
+	HYDROGRAPH AT	55B	1028.	12.58	190.	53.	18.	1.86
+	2 COMBINED AT	C55B	1034.	12.58	192.	53.	18.	2.48
+	ROUTED TO	CAP7	688.	12.92	192.	53.	18.	2.48
+	ROUTED TO	RCAP7	678.	13.25	192.	53.	18.	2.48
+	HYDROGRAPH AT	29B	117.	12.08	7.	2.	1.	.08
+	2 COMBINED AT	C29B1	678.	13.25	198.	55.	18.	2.56
+	2 COMBINED AT	C29B2	843.	13.00	263.	74.	25.	3.10
+	ROUTED TO	29BTC	843.	13.00	263.	74.	25.	3.10
+	HYDROGRAPH AT	RD45A	487.	12.33	60.	16.	5.	.62
+	ROUTED TO	45ATB	329.	13.42	60.	16.	5.	.62
+	HYDROGRAPH AT	45B	724.	12.42	103.	30.	10.	.66
+	2 COMBINED AT	C45B	728.	12.42	161.	47.	16.	.66
+	ROUTED TO	CAP8	518.	12.83	161.	47.	16.	.66
+	ROUTED TO	RCAP8	510.	13.25	161.	47.	16.	.66
+	HYDROGRAPH AT	29C	388.	12.08	25.	6.	2.	.23
+	2 COMBINED AT	C29C1	510.	13.25	186.	53.	18.	.89
+	2 COMBINED AT	C29C2	1321.	13.08	441.	125.	42.	3.99
+	ROUTED TO	29CT36	1321.	13.08	441.	125.	42.	3.99
+	HYDROGRAPH AT	55	239.	12.08	17.	5.	2.	.14
+	ROUTED TO	CAP9	155.	12.17	17.	5.	2.	.14
+	ROUTED TO	RCAP9	126.	12.67	17.	5.	2.	.14
	HYDROGRAPH AT							

+	29D	775.	12.25	69.	18.	6.	.65
ROUTED TO +	29T36	583.	12.75	69.	18.	6.	.65
HYDROGRAPH AT +	36C	631.	12.17	52.	14.	5.	.44
4 COMBINED AT +	C36	1813.	12.83	568.	159.	53.	5.22
ROUTED TO +	36T37	1788.	12.92	567.	159.	53.	5.22
HYDROGRAPH AT +	29AWST	0.	.00	0.	0.	0.	.54
HYDROGRAPH AT +	30	901.	12.58	150.	45.	15.	1.12
2 COMBINED AT +	C30	901.	12.58	150.	45.	15.	1.12
ROUTED TO +	30T37	864.	12.67	150.	45.	15.	1.12
HYDROGRAPH AT +	37	678.	12.08	51.	15.	5.	.47
3 COMBINED AT +	C37	2473.	12.83	744.	212.	71.	6.81
ROUTED TO +	ADOTEL	17.	24.00	17.	17.	17.	6.81
ROUTED TO +	37T38	17.	24.92	17.	17.	17.	6.81
HYDROGRAPH AT +	17A	257.	12.17	26.	8.	3.	.18
ROUTED TO +	17AT23	253.	12.25	26.	8.	3.	.18
HYDROGRAPH AT +	23	394.	12.17	34.	10.	3.	.28
HYDROGRAPH AT +	48	786.	12.33	83.	23.	8.	.77
ROUTED TO +	CAP3	757.	12.33	83.	23.	8.	.77
ROUTED TO +	RCAP3A	715.	12.50	83.	23.	8.	.77
ROUTED TO +	RCAP3B	607.	12.58	83.	23.	8.	.77
HYDROGRAPH AT +	17B	284.	12.25	31.	10.	3.	.22
2 COMBINED AT +	C17B	667.	12.58	114.	33.	11.	.99
ROUTED TO +	17BT22	666.	12.58	114.	33.	11.	.99
HYDROGRAPH AT +	47	1121.	12.58	165.	45.	15.	1.67

+	ROUTED TO CAP4+5	1052.	12.67	165.	45.	15.	1.67
+	ROUTED TO RCAP4	884.	13.25	165.	45.	15.	1.67
+	HYDROGRAPH AT 22	549.	12.17	56.	17.	6.	.41
+	2 COMBINED AT C22A	897.	13.25	219.	61.	21.	2.08
+	2 COMBINED AT C22	1141.	12.25	328.	93.	31.	3.07
+	ROUTED TO 22T23	990.	12.58	327.	93.	31.	3.07
+	3 COMBINED AT C23	1157.	12.42	383.	110.	37.	3.53
+	ROUTED TO 23T24	1156.	12.42	383.	110.	37.	3.53
+	HYDROGRAPH AT 49	792.	12.33	89.	25.	8.	.79
+	ROUTED TO CAP2	760.	12.42	89.	25.	8.	.79
+	ROUTED TO RCAP2	675.	12.75	89.	25.	8.	.79
+	HYDROGRAPH AT 50	371.	12.17	26.	7.	2.	.28
+	ROUTED TO CAP1	325.	12.17	29.	11.	7.	.28
+	ROUTED TO RCAP1	268.	12.67	29.	11.	7.	.28
+	HYDROGRAPH AT 18A	1188.	12.25	121.	36.	12.	1.01
+	3 COMBINED AT C18A	1419.	12.33	235.	71.	27.	2.08
+	ROUTED TO 18T24	1122.	12.75	235.	71.	27.	2.08
+	HYDROGRAPH AT 24	359.	12.25	45.	14.	5.	.29
+	3 COMBINED AT C24	2356.	12.42	643.	190.	67.	5.90
+	ROUTED TO 24T31A	2328.	12.58	643.	190.	67.	5.90
+	ROUTED TO 24T31B	2343.	12.67	643.	190.	67.	5.90
+	HYDROGRAPH AT 31B	545.	12.25	53.	15.	5.	.47
+	2 COMBINED AT C31	2455.	12.58	689.	203.	71.	6.37
+	DIVERSION TO D31W	2155.	12.58	476.	119.	40.	6.37

+	HYDROGRAPH AT	D31	300.	12.00	213.	83.	31.	6.37
+	ROUTED TO	31T38	300.	12.42	213.	83.	31.	6.37
+	HYDROGRAPH AT	31A	634.	12.25	64.	19.	6.	.53
+	ROUTED TO	31AT38	562.	12.50	64.	19.	6.	.53
+	HYDROGRAPH AT	38	525.	12.33	68.	21.	7.	.47
+	4 COMBINED AT	C38	1214.	12.42	343.	130.	58.	14.18
+	ROUTED TO	38T39	1183.	12.42	343.	130.	58.	14.18
+	DIVERSION TO	DB10	186.	12.42	10.	2.	1.	14.18
+	HYDROGRAPH AT	ADD10	997.	12.42	333.	127.	57.	14.18
+	DIVERSION TO	DB9	195.	12.42	16.	4.	1.	14.18
+	HYDROGRAPH AT	ADD9	802.	12.42	318.	123.	56.	14.18
+	DIVERSION TO	DB8	185.	12.42	21.	5.	2.	14.18
+	HYDROGRAPH AT	ADD8	617.	12.42	297.	118.	54.	14.18
+	DIVERSION TO	DB7	0.	.00	0.	0.	0.	14.18
+	HYDROGRAPH AT	ADD7	617.	12.42	297.	118.	54.	14.18
+	DIVERSION TO	DB6	0.	.00	0.	0.	0.	14.18
+	HYDROGRAPH AT	ADD6	617.	12.42	297.	118.	54.	14.18
+	DIVERSION TO	DB5	0.	.00	0.	0.	0.	14.18
+	HYDROGRAPH AT	ADD5	617.	12.42	297.	118.	54.	14.18
+	HYDROGRAPH AT	D31W	2155.	12.58	476.	119.	40.	6.37
+	ROUTED TO	31WT32	1952.	12.92	476.	119.	40.	6.37
+	HYDROGRAPH AT	32	417.	12.33	54.	16.	5.	.38
+	2 COMBINED AT	C32	2183.	12.83	571.	146.	49.	.38
	ROUTED TO							

```
+                        32T39      2180.   12.83        571.        146.        49.        .38

        HYDROGRAPH AT
+                           39       382.   12.42         60.         19.         6.        .36

        3 COMBINED AT
+                          C39      2558.   12.83        833.        259.       101.      14.92

        DIVERSION TO
+                        BASIN       758.   12.83         70.         18.         6.      14.92

        HYDROGRAPH AT
+                         SOSS      1800.   12.58        763.        241.        95.      14.92
1
                                   SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                       (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                       COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                   PEAK                                     PEAK

                              (MIN)     (CFS)     (MIN)      (IN)     (MIN)     (CFS)     (MIN)       (IN)

         FOR STORM = 1  STORM AREA (SQ MI) =        .01
           RCAP11  MANE        1.73   1501.14    745.00      4.36      5.00   1501.13    745.00       4.36

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2464E+03 EXCESS= .0000E+00 OUTFLOW= .2466E+03 BASIN STORAGE= .1048E-04
PERCENT ERROR=   -.1

         FOR STORM = 2  STORM AREA (SQ MI) =       1.00
           RCAP11  MANE        1.70   1491.68    743.53      4.33      5.00   1491.61    745.00       4.33

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2448E+03 EXCESS= .0000E+00 OUTFLOW= .2450E+03 BASIN STORAGE= .1177E-04
PERCENT ERROR=   -.1

         FOR STORM = 3  STORM AREA (SQ MI) =       5.00
           RCAP11  MANE        1.66   1448.77    747.19      4.21      5.00   1448.30    745.00       4.20

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2376E+03 EXCESS= .0000E+00 OUTFLOW= .2379E+03 BASIN STORAGE= .9588E-05
PERCENT ERROR=   -.1

         FOR STORM = 4  STORM AREA (SQ MI) =      10.00
           RCAP11  MANE        1.79   1395.53    746.52      4.05      5.00   1395.02    745.00       4.05

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2289E+03 EXCESS= .0000E+00 OUTFLOW= .2290E+03 BASIN STORAGE= .1252E-04
PERCENT ERROR=   -.1

         FOR STORM = 5  STORM AREA (SQ MI) =      30.00
           RCAP11  MANE        1.76   1327.22    747.52      3.85      5.00   1326.40    745.00       3.85

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2176E+03 EXCESS= .0000E+00 OUTFLOW= .2178E+03 BASIN STORAGE= .1368E-04
PERCENT ERROR=   -.1

         FOR STORM = 6  STORM AREA (SQ MI) =      60.00
           RCAP11  MANE        1.77   1259.23    748.20      3.65      5.00   1256.52    745.00       3.65

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2064E+03 EXCESS= .0000E+00 OUTFLOW= .2065E+03 BASIN STORAGE= .1165E-04
PERCENT ERROR=   -.1
```

```
FOR STORM = 7  STORM AREA (SQ MI) =      90.00
  RCAP11  MANE        1.86   1232.86    746.17      3.58      5.00   1231.24    745.00        3.58

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2023E+03 EXCESS= .0000E+00 OUTFLOW= .2025E+03 BASIN STORAGE= .1310E-04
PERCENT ERROR=   -.1



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


   -----DSS---ZCLOSE Unit:  71,   File: SEMP100N.DSS
             Pointer Utilization:    .25
             Number of Records:      25
             File Size:      53.2  Kbytes
             Percent Inactive:     .0
```

APPENDIX D-2

NORTHWEST MESA AREA
100-YEAR, 24-HOUR STORM
EXISTING LAND USE CONDITIONS
HEC-1 MODEL

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUL   1997              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   25JUN98  TIME  08:41:23  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
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

1 HEC-1 INPUT

PAGE 1

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

   1          ID   AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROADS TO THE EAST
   2          ID   ALL THE HYDROGRAPHS ENTERING INTO THE EMF ARE SENT TO TAPE 21
   3          ID
   4          ID   ALL STREET ROUTINGS HAVE N VALUES OF .015 FOR ASPHALT AND .03 FOR OVERLAND
   5          ID   FLOWS
   6          ID
   7          ID   EAST MARICOPA COUNTY AREA DRAINAGE MASTER STUDY - PHASE 2
   8          ID   THIS AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROAD TO THE
   9          ID   EAST, MCDOWELL ROAD TO THE NORTH AND THE SUPERSTITION FREEWAY TO THE SOUTH
  10          ID
  11          ID   FILENAME: PHASE2.DAT
  12          ID
  13          ID   DDMS FILE FAMILY NAME: PHASE2
  14          ID
  15          ID   THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
  16          ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 18.60 SQ. MI.
  17          ID   THIS MODEL USES THE REVISED LAND USE AND A Kn VALUE OF 0.09 FOR DESERT LAND
  18          ID   USES
  19          ID
  20          ID   THIS MODEL WAS REVISED TO ESTABLISH CONCENTRATION POINTS AND HYDROGRAPHS
  21          ID   ENTERING INTO THE EMF.
  22          ID   INITIAL REVISION IN MARCH 1997
  23          ID
  24          ID   100-YEAR 24-HOUR FREQUENCY
  25          ID
  26          ID   METHODOLOGY:
  27          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
  28          ID   SCS TYPE II RAINFALL DISTRIBUTION
```

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 29          ID   S-GRAPH HYDROGRAPH
 30          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 31          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 32          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 33          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
 34          ID   DATED 1994
 35          ID   THE NOAA TECHNICAL MEMORANDUM NWS HYDRO-40 DEPTH AREA RATIOS
 36          ID
 37          ID   STUDY INITIALLY PERFORMED BY LISA C. YOUNG
 38          ID   REVISED BY VALERIE A. SWICK
 39          ID   HYDROLOGY BRANCH, ENGINEERING DISTRICT,
 40          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, SPRING 1996
 41          ID
 42          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
 43          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL,  5FT/SEC FOR CONCRETE CHANNEL
 44          ID
 45          ID   THIS MODEL DOES NOT REFLECT THE STORM DRAINS IN THE AREA AS THEY HAVE A LOW
 46          ID   CAPACITY AND OUTLET AT THE SAME LOCATION AS SURFACE FLOW
 47          ID
 48          ID
 49          ID    LAST UPDATED ON  3/13/98
 50          ID
 51          ID
 52          ID   DDM MCUHP2 Phase 2 model, north of Superstition Freeway
             *DIAGRAM
 53          IT       5  1APR97    0000    1000
 54          IO       5
1                                          HEC-1 INPUT
PAGE  2

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

 55          IN      15
 56          JD    3.60    0.01
 57          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 58          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 59          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 60          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 61          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 62          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 63          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 64          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 65          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 66          PC    .983    .986    .989    .992    .995    .998   1.000
 67          JD    3.58     1.0
 68          JD    3.49     5.0
 69          JD    3.38    10.0
 70          JD    3.24    30.0
 71          JD    3.10    60.0
 72          JD    3.05    90.0
             *
             * DDM   ***** Updated *****

 73          KK       9
 74          KM   BASIN 9
 75          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 76          KM    L=      1.6  Lca=       .8   S=   11.2  Kn= .108  LAG= 107.0
 77          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 78          BA     .44
 79          LG     .48     .25    4.80     .47    1.00
 80          UI     14.     14.     14.     14.     16.     45.     50.     56.     64.     69.
 81          UI     75.     79.     84.     90.     98.    105.    113.    129.    154.    166.
 82          UI    182.    161.    144.    132.    123.    115.    108.    101.     92.     86.
 83          UI     80.     73.     68.     64.     54.     45.     40.     27.     24.     24.
 84          UI     23.     23.     22.     14.     14.     14.     14.     12.      4.      4.
 85          UI      4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
 86          UI      4.      4.      4.      0.      0.      0.      0.      0.      0.      0.
 87          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Updated *****

 88          KK       4
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```
 89          KM   BASIN 4
 90          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91          KM    L=       1.7  Lca=       1.2   S=   23.5  Kn= .053  LAG=  54.9
 92          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 93          BA    1.00
 94          LG     .23     .29    4.80     .35   36.00
 95          UI     61.     61.    128.    227.    291.    336.    378.    438.    508.    662.
 96          UI    789.    649.    551.    487.    417.    364.    308.    259.    187.    112.
 97          UI    104.    101.     62.     61.     42.     19.     19.     19.     19.     19.
 98          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
 99          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  3

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


100          KK     4T8
101          KM   ROUTE FLOWS FROM S4 TO S8
102          KM   VIA GREENFIELD ROAD
103          RS       4    FLOW      -1
104          RC   0.030    .015   0.030    4000    .0023
105          RX       0    1009    1021    1021    1089    1089    1105    1144
106          RY     1.7     0.7     0.5       0       0     0.5     0.7     1.7
             * DDM   ***** Updated *****

107          KK       8
108          KM   BASIN 8
109          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
110          KM    L=       1.5  Lca=        .9   S=   34.9  Kn= .078  LAG=  65.8
111          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
112          BA     .50
113          LG     .31     .33    4.90     .27   11.00
114          UI     25.     25.     25.     83.    103.    122.    139.    152.    171.    194.
115          UI    224.    282.    333.    284.    243.    217.    195.    171.    152.    133.
116          UI    120.     93.     69.     45.     44.     42.     32.     25.     25.     15.
117          UI      8.      8.      8.      8.      8.      8.      8.      8.      8.      0.
118          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
119          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

120          KK      C8
121          KM   COMBINE FLOWS FROM S8 AND S4
122          KM   CONCENTRATION OF FLOWS AT GREENFIELD ROAD AND MCLELLEN ROAD.
123          KM   FLOWS WILL NOT BE ROUTED TO C9 BECAUSE OF THE SHORT DISTANCE.  FLOWS WILL
124          KM   ASSUMED TO BE AT C9
125          HC       2
             * DDM   ***** Preserved *****

126          KK  EMFHOB
127          KM   COMBINE FLOWS FROM C8 AND S9
128          KM   AT GREENFIELD ROAD AND RWCD (APPROXIMATELY HOBART DRIVE)
129          HC       2
             * ZW A=HOBART ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

130          KK   C9T15
131          KM   ROUTE FLOWS FROM C9 TO 15A (AT THE COLBY STREET ALIGNMENT) VIA EMF
             * KO      3
132          RS       2    FLOW      -1
133          RC   0.030   0.030   0.030    2000  0.0001
134          RX       0      10      20      50     130     160     170     180
135          RY      10      10      10       0       0      10      10      10
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE  4
```

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

 136          KK       3
 137          KM   BASIN 3
 138          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 139          KM    L=       1.8  Lca=       1.3   S=   36.1  Kn= .064  LAG=  64.4
 140          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 141          BA    1.00
 142          LG     .22      .26     5.30      .30   24.00
 143          UI     52.      52.      57.     175.    215.    254.    287.    318.    360.    403.
 144          UI    484.     614.     666.     552.    478.    428.    382.    334.    296.    259.
 145          UI    222.     166.     113.      92.     86.     80.     52.     52.     45.     16.
 146          UI     16.      16.      16.      16.     16.     16.     16.     16.      0.      0.
 147          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 148          KK      D3
 149          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME FROM SUBBASIN 3
 150          DT    RET3      83
 151          DI       0   10000
 152          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 153          KK     3T7
 154          KM   ROUTE FLOWS FROM S3 TO S7
 155          KM   VIA HIGLEY ROAD
 156          RS       3    FLOW      -1
 157          RC   0.030    .015   0.030    2600   .0023
 158          RX       0    1009    1021    1021    1089    1089    1105    2144
 159          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
              * DDM   ***** Updated *****

 160          KK       7
 161          KM   BASIN 7
 162          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 163          KM    L=       1.1  Lca=        .5   S=   52.7  Kn= .083  LAG=  44.8
 164          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 165          BA     .28
 166          LG     .34      .28     5.40      .31   13.00
 167          UI     21.      21.      69.      93.    113.    132.    157.    209.    259.    214.
 168          UI    177.     151.     126.     104.     81.     49.     36.     34.     21.     21.
 169          UI      7.       6.       6.       6.      6.      6.      0.      0.      0.      0.
 170          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 171          KK      C7
 172          KM   COMBINE FLOWS FROM S3 AND S7
 173          KM    CONCENTRATION OF FLOWS AT MCLELLEN ROAD AND HIGLEY ROAD.
 174          HC       2
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  5

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

 175          KK    7T10
 176          KM   ROUTE FLOWS FROM C7 TO S10
 177          KM   VIA HIGLEY ROAD
 178          RS       3    FLOW      -1
 179          RC   0.030    .015   0.030    2680   .0023
 180          RX       0    1009    1021    1021    1089    1089    1105    2144
 181          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
              * DDM   ***** Updated *****

 182          KK      10
 183          KM   BASIN 10
```

```
184          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
185          KM    L=       1.3  Lca=        .8   S=   53.8  Kn= .062  LAG=  42.5
186          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
187          BA     .72
188          LG     .21      .25     4.70      .40    26.00
189          UI     57.      63.     202.     272.     325.     386.     468.     655.     681.     533.
190          UI    450.     371.     306.     246.     153.     100.      94.      59.      57.      18.
191          UI     18.      18.      18.      18.      18.       0.       0.       0.       0.       0.
192          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

193          KK     D10
194          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME FROM BASIN 10
195          DT   RET10      49
196          DI       0   10000
197          DQ       0   10000
             *
             * DDM   ***** Preserved *****

198          KK     C10
199          KM   COMBINE FLOWS FROM C7 AND S10
200          KM   CONCENTRATION OF FLOWS AT BROWN ROAD AND HIGLEY ROAD.
201          HC       2
             *
             * DDM   ***** Preserved *****

202          KK   10T8A
203          KM   ROUTE FLOWS FROM C10 TO S8A
204          KM   VIA BROWN ROAD
205          RS       5    FLOW      -1
206          RC   0.030    .015   0.030    1250  0.0076
207          RX       0    1009    1021    1021    1089    1089    1105    2144
208          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             * DDM   ***** Updated *****

209          KK      8A
210          KM   BASIN 8A
211          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
212          KM    L=        .6  Lca=        .4   S=   35.0  Kn= .090  LAG=  38.3
213          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
214          BA     .12
215          LG     .35      .35     4.70      .26      .00
1                                              HEC-1 INPUT
PAGE  6

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

216          UI     10.      16.      40.      54.      64.      79.     108.     129.      99.      82.
217          UI     66.      53.      39.      22.      18.      13.      10.       4.       3.       3.
218          UI      3.       3.       0.       0.       0.       0.       0.       0.       0.       0.
219          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

220          KK     C8A
221          KM   COMBINE FLOWS FROM C10 AND S8A
222          KM    CONCENTRATION OF FLOWS AT BROWN ROAD AND ROSEMONT.
223          HC       2
             *
             * DDM   ***** Preserved *****

224          KK  8AT15A
225          KM   ROUTE FLOWS FROM C8A TO S15A
226          KM   VIA BROWN ROAD
227          RS       3    FLOW      -1
228          RC   0.030    .013   0.030    3000   .0076
229          RX       0    1009    1021    1021    1089    1089    1105    2144
230          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             * DDM   ***** Updated *****
```

```
231          KK     15A
232          KM   BASIN 15A
233          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
234          KM    L=       1.0  Lca=        .7   S=   33.0  Kn= .053  LAG=  34.3
235          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
236          BA     .35
237          LG     .25      .25     4.90      .35   28.00
238          UI     35.      68.     147.     191.    237.     312.     429.     337.     270.     214.
239          UI    167.     108.      60.      51.     35.      19.      11.      11.      11.      11.
240          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
241          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

242          KK    C15A
243          KM   COMBINE FLOWS FROM C8A AND S15A
244          KM   CONCENTRATION BEFORE ENTERING INTO THE EMF AT BROWN ROAD.
245          HC       2
             * ZW A=BROWN ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

246          KK  EMFBRN
247          KM   COMBINE FLOW FROM C9 AND C15AI
248          KM   CONCENTRATION OF FLOWS IN THE EMF AT BROWN ROAD
249          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


250          KK  15AT15
251          KM   ROUTE FLOWS FROM THE EMF AT BROWN ROAD TO COLBY ROAD.
252          KM   VIA THE EMF
             * KO     3
253          RS       3    FLOW      -1
254          RC    0.03    0.03    0.03    4500    .005
255          RX       0      10      20      50     130     160     170     180
256          RY      10      10      10       0       0      10      10      10
             * DDM   ***** Updated *****

257          KK     15B
258          KM   BASIN 15B
259          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
260          KM    L=       1.6  Lca=        .4   S=   21.6  Kn= .055  LAG=  38.5
261          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
262          BA     .51
263          LG     .23      .26     4.70      .39   32.00
264          UI     45.      68.     172.     228.    273.     335.     455.     554.     426.     352.
265          UI    285.     230.     171.      97.     75.      58.      45.      20.      14.      14.
266          UI     14.      14.       0.       0.      0.       0.       0.       0.       0.       0.
267          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

268          KK  EMFCLB
269          KM   COMBINE FLOWS FROM S15, C8A AND C15A
270          KM   CONCENTRATION OF FLOWS WITHIN THE EMF AT COLBY ROAD.
271          HC       2
             *
             * DDM   ***** Preserved *****

272          KK   15T16
273          KM   ROUTE FLOWS FROM C15 (AT COLBE ROAD) TO S16 (AT UNIVERSITY DRIVE)
274          KM   VIA EMF
             * KO     3
275          RS       1    FLOW      -1
276          RC   0.030   0.030   0.030    1200  0.0005
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277          RX       0      10      20      50     130     160     170     180
278          RY      10      10      10       0       0      10      10      10
             *
             * DDM   ***** Updated *****

279          KK       1
280          KM   BASIN 1
281          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
282          KM    L=        .9  Lca=        .3   S=   55.6  Kn= .081  LAG=  33.1
283          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
284          BA     .39
285          LG     .33     .33    4.40     .35    7.00
286          UI     40.     83.    175.    226.    283.    391.    482.    362.    290.    226.
287          UI    171.     92.     67.     47.     34.     12.     12.     12.     12.      0.
288          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
289          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE  8

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


290          KK     D1S
291          KM   DIVERT FLOWS TO S6
292          KM   FLOW SPLIT AT INTERSECTION OF MCKELLIPS AND BUSH HWY, WITH THE MAJORITY OF
293          KM    THE FLOWS HEADING SOUTH TO S5.
294          DT     D1W
295          DI       0     150   10000
296          DQ       0     150     150
             *
             * DDM   ***** Preserved *****

297          KK     1T5
298          KM   ROUTE FLOWS FROM S1 TO S5
299          KM   VIA POWER ROAD
300          RS       6    FLOW      -1
301          RC    0.03   0.015    0.03    5280  0.0085
302          RX       0    1005    1012    1012    1080    1080    1087   .2096
303          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Updated *****

304          KK       5
305          KM   BASIN 5
306          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
307          KM    L=       1.3  Lca=        .8   S=   73.1  Kn= .063  LAG=  40.7
308          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
309          BA     .95
310          LG     .27     .28    4.10     .52   21.00
311          UI     79.    102.    287.    388.    461.    557.    700.    979.    844.    680.
312          UI    569.    464.    381.    263.    151.    131.     95.     79.     35.     24.
313          UI     24.     24.     24.     24.      0.      0.      0.      0.      0.      0.
314          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

315          KK      C5
316          KM   COMBINE FLOWS FROM S1 AND S5
317          KM   CONCENTRATION OF FLOWS AT BROWN ROAD AND BUSH HIGHWAY.
318          KM   AREA IS ADJUSTED TO SHOW THE ASSIGNED AREA FOR THE DIVERSION OF D1.
319          HC       2    1.15
             *
             * DDM   ***** Preserved *****

320          KK     DC5
321          KM   DIVERT FLOWS TO S12
322          KM   MAIN FLOWS HEAD WEST ALONG BROWN ROAD TO RECKER ROAD, THE DIVERTED FLOWS HEAD
323          KM   SOUTH ALONG BUSH HIGHWAY TO UNIVERSITY DRIVE.
324          DT     D5S
```

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 325          DI        0      350   10000
 326          DQ        0      350     350
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 327          KK     5T6
 328          KM   ROUTE FLOWS FROM C5 TO S6
 329          KM   VIA BROWN ROAD
 330          RS       6    FLOW      -1
 331          RC   0.030    .015   0.030    5280  0.0091
 332          RX       0    1009    1021    1021    1089    1089    1105    2144
 333          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
              *
              * DDM   ***** Updated *****

 334          KK       2
 335          KM   BASIN 2
 336          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 337          KM    L=      1.5  Lca=      1.0   S=   65.3  Kn= .082  LAG=  62.3
 338          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 339          BA    1.00
 340          LG     .23     .27    4.55     .42   15.00
 341          UI     54.     54.     70.    185.    228.    270.    303.    337.    386.    435.
 342          UI    553.    681.    634.    531.    467.    420.    365.    323.    280.    248.
 343          UI    188.    133.     95.     90.     88.     54.     54.     49.     17.     17.
 344          UI     17.     17.     17.     17.     17.     17.     17.      0.      0.      0.
 345          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 346          KK     2T6
 347          KM   ROUTE FLOWS FROM S2 TO S6
 348          KM   VIA RECKER ROAD
 349          RS       6    FLOW      -1
 350          RC   0.030    .015   0.030    5280  0.0049
 351          RX       0    1009    1021    1021    1089    1089    1105    2144
 352          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
              *
              * DDM   ***** Updated *****

 353          KK       6
 354          KM   BASIN 6
 355          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 356          KM    L=      1.6  Lca=      1.0   S=   59.4  Kn= .052  LAG=  41.2
 357          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 358          BA    1.00
 359          LG     .25     .25    4.40     .46   30.00
 360          UI     82.    102.    295.    400.    475.    571.    710.   1002.    904.    722.
 361          UI    606.    498.    404.    296.    172.    138.    110.     82.     49.     25.
 362          UI     25.     25.     25.     25.      0.      0.      0.      0.      0.      0.
 363          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 364          KK     GD1
 365          KM   RETRIEVE FLOWS DIVERTED AT D1, FROM MCKELLIPS ROAD AND BUSH HIGHWAY.
 366          DR     D1W
              *
              * DDM   ***** Preserved *****

 367          KK   RGD1A
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368          KM   ROUTE FLOWS FROM S1 THROUGH SUBBASIN 6 TO RECKER ROAD AND BROWN ROAD
369          KM   VIA ROADS
370          RS       7    FLOW      -1
371          RC   0.030   0.015   0.030    6000   0.006
372          RX       0    1005    1009    1009    1041    1041    1044    2049
373          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Preserved *****

374          KK   RGD1B
375          KM   ROUTE FLOWS FROM S1 TO S6
376          KM   VIA RECKER ROAD
377          RS       3    FLOW      -1
378          RC   0.030    .015   0.030    2500  0.0025
379          RX       0    1009    1021    1021    1089    1089    1105    2144
380          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Preserved *****

381          KK      C6
382          KM   COMBINE FLOWS FROM S1, S2, S5 AND S6
383          KM   CONCENTRATION OF FLOWS AT RECKER ROAD AND BROWN ROAD.
384          HC       4    2.76
             *
             * DDM   ***** Preserved *****

385          KK     DC6
386          KM   DIVERT FLOWS FROM C6 TO S14
387          KM   MAIN FLOWS HEAD THROUGH SUBBASIN 14 TO HIGLEY ROAD AND UNIVERSITY DRIVE,
388          KM   DIVERTED FLOWS HEAD SOUTH ALONG RECKER ROAD TO UNIVERSITY DRIVE.
389          DT     D6W
390          DI       0     400   10000
391          DQ       0     400     400
             *
             * DDM   ***** Preserved *****

392          KK   6T13B
393          KM   ROUTE FLOWS FROM C6 (RECKER RD AND BROWN RD) TO S13 (RECKER AND UNIVERSITY)
394          KM   VIA RECKER ROAD
395          RS       3    FLOW      -1
396          RC   0.030    .015   0.030    2640  0.0049
397          RX       0    1009    1021    1021    1089    1089    1105    2144
398          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****
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                                          HEC-1 INPUT

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

399          KK      11
400          KM   BASIN 11
401          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
402          KM    L=      2.1  Lca=      1.5   S=   57.4  Kn= .087  LAG=  90.0
403          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
404          BA    1.06
405          LG     .24     .30    4.15     .52    5.00
406          UI     40.     40.     40.     40.    117.    143.    167.    189.    207.    225.
407          UI    240.    262.    288.    310.    355.    436.    486.    506.    435.    390.
408          UI    354.    328.    306.    276.    252.    233.    210.    191.    173.    144.
409          UI    114.     81.     70.     68.     65.     65.     42.     40.     40.     40.
410          UI     19.     12.     12.     12.     12.     12.     12.     12.     12.     12.
411          UI     12.     12.     12.      0.      0.      0.      0.      0.      0.      0.
412          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

413          KK     D11
414          KM   DIVERT FLOWS TO S19
415          KM   MAIN FLOWS HEAD WEST ALONG UNIVERSITY DRIVE TO BUSH HIGHWAY
```

```
416          KM   DIVERTED FLOWS HEAD SOUTH WITHIN A WASH THROUGH SUBBASIN 19, TO POWER ROAD
417          KM   AND APACHE TRAIL.
418          DT    D11S
419          DI       0     250   10000
420          DQ       0     250     250
             *
             * DDM   ***** Preserved *****

421          KK   11T12
422          KM   ROUTE FLOWS FROM S11 TO S12
423          KM   VIA UNIVERSITY DRIVE
424          RS       3    FLOW      -1
425          RC   0.030    .015   0.030    2640  0.0076
426          RX       0    1009    1021    1021    1089    1089    1105    2144
427          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****

428          KK      12
429          KM   BASIN 12
430          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
431          KM    L=      1.8  Lca=        .8   S=   77.8  Kn= .083  LAG=  60.0
432          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
433          BA    1.03
434          LG     .17     .27    4.00     .63   26.00
435          UI     58.     58.     90.    203.    253.    297.    334.    376.    430.    501.
436          UI    645.    748.    620.    531.    472.    416.    362.    316.    276.    221.
437          UI    156.    102.     98.     95.     61.     58.     51.     18.     18.     18.
438          UI     18.     18.     18.     18.     18.      0.      0.      0.      0.      0.
439          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


440          KK    GD5S
441          KM   RETRIEVE DIVERTED FLOWS FROM D5S
442          DR     D5S
             *
             * DDM   ***** Preserved *****

443          KK   RGD5A
444          KM   ROUTE FLOWS TO S12
445          KM   VIA POWER ROAD
446          RS       6    FLOW      -1
447          RC    0.03   0.015    0.03    5280  0.0085
448          RX       0    1005    1012    1012    1080    1080    1087    2096
449          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Preserved *****

450          KK     C12
451          KM   COMBINE FLOWS FROM S11, S12 AND D5
452          KM   CONCENTRATION OF FLOWS AT BUSH HIGHWAY AND UNIVERSITY DRIVE.
453          HC       3    2.13
             *
             * DDM   ***** Preserved *****

454          KK    DC12
455          KM   DIVERT FLOWS TO S19
456          KM   MAIN FLOWS HEAD WEST ALONG UNIVERSITY DRIVE TO RECKER ROAD.
457          KM   DIVERTED FLOWS HEAD SOUTH ALONG POWER ROAD TO APACHE TRAIL.
458          DT    D12S
459          DI       0     300   10000
460          DQ       0     300     300
             *
             * DDM   ***** Preserved *****
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461          KK  12T13A
462          KM   ROUTE FLOWS FROM C12 TO S13
463          KM   VIA UNIVERSITY DRIVE
464          RS       4    FLOW      -1
465          RC   0.030    .015   0.030    3800  0.0186
466          RX       0    1009    1021    1021    1089    1089    1105    2144
467          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             * DDM   ***** Updated *****

468          KK     13A
469          KM   BASIN 13A
470          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
471          KM    L=      1.5  Lca=       .9   S=   46.7  Kn= .059  LAG=  45.9
472          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
473          BA     .77
474          LG     .26     .27    4.10     .53   24.00
475          UI     57.     57.    180.    252.    305.    354.    422.    527.    717.    619.
476          UI    506.    436.    362.    302.    249.    170.    100.     94.     72.     57.
477          UI     38.     17.     17.     17.     17.     17.     17.      0.      0.      0.
478          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

479          KK    C13A
480          KM   COMBINE FLOWS FROM S12 AND S13A
481          KM   CONCENTRATION OF FLOWS AT RECKER ROAD AND UNIVERSITY DRIVE.
482          HC       2    2.27
             *
             * DDM   ***** Preserved *****

483          KK  UNIVBA
484          KM   ROUTE FLOWS THROUGH THE UNIVERSITY DRAIN BASIN AT 62ND ST. AND UNIVERSITY DR.
             * KO     3
485          DT   BASIN   31.28
486          DI       0    1000   10000
487          DQ       0    1000   10000
             *
             * DDM   ***** Preserved *****

488          KK    D13A
489          KM   DIVERT ALL THE FLOWS BUT 7 CFS THAT ARE FLOWING SOUTH FROM THE UNIVERSITY
490          KM    BASIN
491          DT   D13AS
492          DI       0       7      10     100   10000
493          DQ       0       0       3      93    9993
             *
             * KK RD13A
             * KM ROUTE THE UNIVERSITY BASIN OUTFLOW TO RECKER ROAD VIA THE UNIVERSITY DRAIN
             * RD  1500    .006    .013            CIRC      1.5
             *
             * DDM   ***** Updated *****

494          KK     13B
495          KM   BASIN 13B
496          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
497          KM    L=      1.1  Lca=       .7   S=   40.9  Kn= .055  LAG=  35.4
498          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
499          BA     .23
500          LG     .25     .26    4.45     .45   29.00
501          UI     22.     40.     90.    117.    144.    184.    265.    226.    179.    143.
502          UI    114.     82.     45.     36.     25.     19.      7.      7.      7.      7.
503          UI      7.      0.      0.      0.      0.      0.      0.      0.      0.      0.
504          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
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 505          KK    C13B
 506          KM   COMBINE FLOWS FROM SUBBASINS 6, 13B, FLOWS IN THE UNIVERSITY DRAIN
 507          HC       3    2.15
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 14

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


 508          KK    D13B
 509          KM   DIVERTED FLOWS INTO THE UNIVERSITY DRAIN - CAPACITY OF PIPE = 119 CFS
 510          DT   D13BS
 511          DI       0     119     200    1000   10000
 512          DQ       0       0      81     881    9881
              *
              * DDM   ***** Preserved *****

 513          KK  RD13BW
 514          KM    ROUTE FLOWS IN UNIVERSITY DRAIN FROM RECKER ROAD TO HIGLEY ROAD
 515          RD    5280    .006    .013            CIRC     4.8
              *
              * DDM   ***** Preserved *****

 516          KK    GD6W
 517          KM   RETRIEVE DIVERTED FLOWS FROM RECKER ROAD AND BROWN ROAD
 518          DR     D6W
              *
              * DDM   ***** Preserved *****

 519          KK  R6WT14
 520          KM   ROUTE HYDROGRAPH D6A TO C14 AT HIGLEY ROAD AND UNIVERSITY DRIVE
 521          KM   VIA RURAL ROADS
 522          RS       8    FLOW      -1
 523          RC    0.03   0.015    0.03    7480   0.006
 524          RX       0    1005    1009    1009    1041    1041    1044    2049
 525          RY       1      .5      .5       0       0      .5      .5       1
              * DDM   ***** Updated *****

 526          KK      14
 527          KM   BASIN 14
 528          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 529          KM    L=      1.4  Lca=       .7   S=   46.4  Kn= .054  LAG=  37.2
 530          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 531          BA    1.00
 532          LG     .23     .25    4.60     .42   30.00
 533          UI     90.    150.    357.    471.    570.    706.   1007.   1056.    809.    666.
 534          UI    532.    424.    279.    158.    144.     90.     67.     28.     28.     28.
 535          UI     28.     28.      0.      0.      0.      0.      0.      0.      0.      0.
 536          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
              * DDM   ***** Preserved *****

 537          KK     D14
 538          KM    DIVERT FLOWS INTO THE UNIVERSITY DRAIN
 539          DT    D14S
 540          DI       0     358    1000   10000
 541          DQ       0       0     642    9642
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 542          KK     C14
 543          KM   COMBINE FLOWS FROM DIVERTED 6 (FROM RECKER ROAD AND BROWN ROAD), SUBBASIN 14,
 544          KM    AND UNIVERSITY DRAIN AT HIGLEY ROAD AND UNIVERSITY DRIVE
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545          HC       3    2.16
             *
             * DDM   ***** Preserved *****

546          KK   RD14W
547          KM   ROUTE FLOWS THROUGH THE UNIVERSITY DRAIN
548          KM   ADJUST SLOPE FROM .0035 TO .0003 TO SIMULATE A VEL OF 3 FT/SEC
549          RD    1685   .0008    .013            CIRC       7
             * DDM   ***** Updated *****

550          KK      16
551          KM   BASIN 16
552          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
553          KM    L=        .5  Lca=        .2   S=   38.0  Kn= .061  LAG=  18.3
554          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
555          BA     .09
556          LG     .28      .28    4.65     .36   21.00
557          UI     22.      74.    115.    183.    127.     81.     35.     20.      7.      5.
558          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
559          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

560          KK     C16
561          KM   COMBINE FLOWS FROM S16 AND C14, BEFORE ENTERING INTO THE EMF
562          HC       2     .64
             * ZW A=UNIVERSITY DRIVE  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

563          KK  EMFUNV
564          KM   COMBINE FLOWS FROM C16I AND C15, IN THE EMF AT UNIVERSITY DRIVE
565          HC       2
             *
             * DDM   ***** Preserved *****

566          KK   16T21
567          KM   ROUTE FLOWS FROM S16 (AT UNIVERSITY DRIVE) TO C21 (AT APACHE TRAIL)
568          KM   VIA EMF
             * KO     3
569          RS       2    FLOW      -1
570          RC   0.030   0.030   0.030    3400 0.00004
571          RX       0      10      20      50     160     180     190     200
572          RY      12      12      12       0       0      25      25      25
             *
             * DDM   ***** Preserved *****
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                                          HEC-1 INPUT

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

573          KK  GD13AS
574          KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN BASIN AT 62ND ST
575          DR   D13AS
             *
             * DDM   ***** Preserved *****

576          KK  13AT21
577          KM   ROUTE FLOWS FROM C13 TO S21 TO
578          KM   VIA RURAL ROADS
579          RS       8    FLOW      -1
580          RC   0.030    .015   0.030    7240   0.006
581          RX       0    1009    1021    1021    1089    1089    1105    2144
582          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Preserved *****

583          KK  GD13BS
584          KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN AT RECKER ROAD
585          DR   D13BS
```

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                 *
                 * DDM   ***** Preserved *****

586              KK  13BT21
587              KM   ROUTE FLOWS FROM C13B TO S21
588              KM   VIA RURAL ROADS
589              RS       7    FLOW      -1
590              RC   0.030    .015   0.030    6240   0.006
591              RX       0    1009    1021    1021    1089    1089    1105    2144
592              RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
                 *
                 * DDM   ***** Preserved *****

593              KK   GD14S
594              KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN AT HIGLEY ROAD.
595              DR    D14S
                 *
                 * DDM   ***** Preserved *****

596              KK   14T21
597              KM   ROUTE FLOWS FROM C14 (HIGLEY & UNIVERSITY) TO S21 (APACHE & EMF)
598              KM   VIA RURAL ROADS
599              RS       2    FLOW      -1
600              RC   0.030    .015   0.030    2000  0.0061
601              RX       0    1009    1021    1021    1089    1089    1105    2144
602              RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
                 *
                 * DDM   ***** Updated *****

603              KK      21
604              KM   BASIN 21
605              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
606              KM    L=       1.7  Lca=        .8   S=   38.0  Kn= .058  LAG=  46.2
607              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
608              BA     .53
1                                                HEC-1 INPUT
PAGE 17

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

609              LG     .23     .26    4.50     .45   30.00
610              UI     39.     39.    121.    170.    207.    240.    285.    355.    484.    429.
611              UI    349.    300.    250.    210.    173.    122.     70.     65.     52.     39.
612              UI     30.     12.     12.     12.     12.     12.     12.      0.      0.      0.
613              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

614              KK     C21
615              KM   COMBINE FLOWS FROM S21 AND C13A AT APACHE TRAIL AND EMF, 13B, 14S,
616              KM    BEFORE ENTERING INTO THE EMF.
617              HC       4    6.23
                 * ZW A=APACHE TRAIL  B=EMF  C=FLOW  E=5MIN  F=100YR
                 *
                 * DDM   ***** Preserved *****

618              KK  EMFAPC
619              KM   COMBINE FLOWS FROM C21I AND C16 AT APACHE TRAIL WITHIN THE EMF
620              HC       2
                 *
                 * DDM   ***** Preserved *****

621              KK   21T28
622              KM   ROUTE FLOWS FROM C21 (AT APACHE TRAIL) TO S28 (AT BROADWAY)
623              KM   VIA EMF
                 * KO      3
624              RS       2    FLOW      -1
625              RC   0.030   0.030   0.030    3300  0.0013
626              RX       0     110     120     150     240     270     280     290
627              RY      12      11      10       0       0      10      11      12
                 *
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```
                    * DDM   ***** Updated *****

 628                KK      19
 629                KM   BASIN 19
 630                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 631                KM    L=      1.4  Lca=       .6   S=   46.4  Kn= .062  LAG=  40.3
 632                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 633                BA     .76
 634                LG     .25      .31     4.00      .50    32.00
 635                UI     63.      84.     233.     313.     374.     452.     574.     795.     664.     538.
 636                UI    447.     365.     295.     203.     112.     104.      70.      63.      20.      19.
 637                UI     19.      19.      19.      19.      0.       0.       0.       0.       0.       0.
 638                UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *
                    * DDM   ***** Preserved *****

 639                KK   GD11S
 640                KM   RETRIEVE DIVERTED HYDROGRAPH D11S
 641                DR    D11S
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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          LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 642                KK    RD11
 643                KM   ROUTE FLOWS TO S19 (AT POWER ROAD AND APACHE TRAIL)
 644                KM   VIA WASH
 645                RS       9    STOR      -1
 646                RC   0.030   0.030   0.030    5500   0.007
 647                RX       0     500    1000    1250    1500    1750    1750    1750
 648                RY     1.5       1     0.5    0.25    0.25     0.5     1.5       5
                    *
                    * DDM   ***** Preserved *****

 649                KK   GD12S
 650                KM   RETRIEVE DIVERTED HYDROGRAPH D12S
 651                DR    D12S
                    *
                    * DDM   ***** Preserved *****

 652                KK    RD12
 653                KM   ROUTE FLOWS TO S19 (AT POWER ROAD AND APACHE TRAIL)
 654                KM   VIA POWER ROAD
 655                RS       3    FLOW      -1
 656                RC    0.03   0.015    0.03    2640  0.0085
 657                RX       0    1005    1012    1012    1080    1080    1087    2096
 658                RY       1      .5      .5       0       0      .5      .5       1
                    *
                    * DDM   ***** Preserved *****

 659                KK     C19
 660                KM   COMBINE FLOWS FROM S19, D11 AND D12  (AT POWER ROAD AND APACHE TRAIL)
 661                HC       3    1.93
                    *
                    * DDM   ***** Preserved *****

 662                KK   19T27
 663                KM   ROUTE FLOWS FROM S19 (AT POWER ROAD AND APACHE TRAIL) TO S27 (AT POWER ROAD
 664                KM   AND BROADWAY ROAD)  VIA POWER ROAD
 665                RS       3    FLOW      -1
 666                RC    0.03   0.015    0.03    2600  0.0057
 667                RX       0    1005    1012    1012    1106    1106    1113    2122
 668                RY       1     0.5     0.5       0       0     0.5     0.5       1
                    * DDM   ***** Updated *****

 669                KK      27
 670                KM   BASIN 27
 671                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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672          KM    L=       .6  Lca=       .3   S=   45.0  Kn= .056  LAG=  20.4
673          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
674          BA     .24
675          LG     .21     .27    4.15     .56   36.00
676          UI     46.    171.    258.    424.    388.    263.    165.     72.     45.     16.
677          UI     12.     12.      0.      0.      0.      0.      0.      0.      0.      0.
678          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 19

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


679          KK     C27
680          KM   COMBINE FLOWS FROM S27(AT POWER RD AND BROADWAY RD) AND C19 (FROM POWER ROAD
681          KM     AND APACHE TRAIL)
682          HC       2
             *
             * DDM   ***** Preserved *****

683          KK   27T28
684          KM   ROUTE FLOWS FROM C27 (AT POWER ROAD AND BROADWAY) TO S28 (BROADWAY ROAD AND
685          KM    HIGLEY ROAD (EMF))
686          KM   VIA CONCRETE LINED CHANNEL
687          RS       6    FLOW      -1
688          RC   0.035   0.015   0.035    8640    .002
689          RX       0     312     326     331     351     356     370     482
690          RY       8       6       5       0       0       5       6       8
             * DDM   ***** Updated *****

691          KK      20
692          KM   BASIN 20
693          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
694          KM    L=      2.4  Lca=      1.2   S=   37.8  Kn= .044  LAG=  47.8
695          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
696          BA     .58
697          LG     .21     .26    4.15     .55   45.00
698          UI     41.     41.    119.    175.    214.    246.    291.    349.    476.    494.
699          UI    393.    336.    286.    242.    202.    158.     99.     71.     67.     46.
700          UI     41.     23.     13.     13.     13.     13.     13.     13.      0.      0.
701          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

702          KK   20T28
703          KM   ROUTE FLOWS FROM S20 (JUST EAST OF THE EMF) TO S28 (BROADWAY RD AND EMF)
704          KM   VIA RURAL STREET
705          RS       3    FLOW      -1
706          RC    0.03   0.015    0.03    2400   0.006
707          RX       0    1005    1009    1009    1041    1041    1044    2049
708          RY       1      .5      .5       0       0      .5      .5       0
             *
             * DDM   ***** Updated *****

709          KK      28
710          KM   BASIN 28
711          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
712          KM    L=      2.0  Lca=       .8   S=   39.5  Kn= .052  LAG=  44.5
713          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
714          BA     .90
715          LG     .23     .27    4.45     .44   38.00
716          UI     68.     68.    229.    311.    377.    439.    525.    699.    859.    697.
717          UI    580.    492.    409.    337.    255.    155.    117.    106.     68.     64.
718          UI     21.     21.     21.     21.     21.     21.      0.      0.      0.      0.
719          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 720          KK     C28
 721          KM   COMBINE FLOWS FROM S28, S20, AND C27 (AT BROADWAY RD BEFORE ENTERING INTO THE
 722          KM     EMF.
 723          HC       3
              * ZW A=BROADWAY ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
              *
              * DDM   ***** Preserved *****

 724          KK  EMFBRD
 725          KM   COMBINE FLOWS FROM C28I AND C21 WITHIN THE EMF AT BROADWAY ROAD.
 726          HC       2   15.44
              *
              * DDM   ***** Preserved *****

 727          KK   28T35
 728          KM   ROUTE FLOWS FROM C28 (BROADWAY ROAD) TO S35 (SOUTHERN AVE.)
 729          KM   VIA EMF
              * KO     3
 730          RS       4    FLOW      -1
 731          RC   0.040   0.030   0.040    5900  0.0009
 732          RX       0     115     130     145     220     250     280     395
 733          RY      14      12      11       0       0      10      11      14
              * DDM   ***** Updated *****

 734          KK      26
 735          KM   BASIN 26
 736          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 737          KM    L=        .8  Lca=        .3   S=   43.8  Kn= .050  LAG=  20.4
 738          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 739          BA     .25
 740          LG     .24     .25    4.25     .51   32.00
 741          UI     47.    176.    266.    438.    401.    272.    170.     75.     46.     16.
 742          UI     13.     13.      0.      0.      0.      0.      0.      0.      0.      0.
 743          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 744          KK   26T34
 745          KM   ROUTE FLOWS FROM S26 (AT 72ND ST AND BROADWAY) TO S34 (AT POWER RD AND
 746          KM    SOUTHERN AVE.)  VIA ROADS
 747          RS       7    FLOW      -1
 748          RC   0.030   0.015   0.030    6600   0.006
 749          RX       0    1005    1009    1009    1041    1041    1044    2049
 750          RY       1      .5      .5       0       0      .5      .5       1
              * DDM   ***** Updated *****

 751          KK      34
 752          KM   BASIN 34
 753          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 754          KM    L=       1.7  Lca=       1.0   S=   32.2  Kn= .068  LAG=  63.0
 755          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 756          BA     .90
 757          LG     .21     .25    4.65     .42   26.00
 758          UI     48.     48.     60.    165.    203.    240.    270.    300.    341.    385.
1                                          HEC-1 INPUT
PAGE 21

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

 759          UI    472.    605.    586.    488.    427.    384.    336.    296.    259.    229.
 760          UI    183.    132.     86.     83.     79.     57.     48.     48.     21.     15.
 761          UI     15.     15.     15.     15.     15.     15.     15.      0.      0.      0.
 762          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 763          KK     D34
 764          KM   RETAIN 100 YEAR 2 HOUR
```

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765          DT   RET34      50
766          DI       0   10000
767          DQ       0   10000
             *
             * DDM   ***** Preserved *****

768          KK     C34
769          KM   COMBINE FLOWS FROM S26 (72N ST AND BROADWAY) AND S34 (POWER RD & SOUTHERN AVE
770          HC       2
             *
             * DDM   ***** Preserved *****

771          KK   34T35
772          KM   ROUTE FLOWS FROM C34 (POWER RD & SOUTHERN) TO S35 (EMF AND SOUTHERN AVE)
773          KM   VIA SOUTHERN ROAD
774          RS       7    FLOW      -1
775          RC    0.03   0.015    0.03    6500  0.0027
776          RX       0    1005    1012    1012    1106    1106    1113    2122
777          RY       1     0.5     0.5       0       0     0.5     0.5       1
             * DDM   ***** Updated *****

778          KK      35
779          KM   BASIN 35
780          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
781          KM    L=      2.2  Lca=      1.1   S=   29.7  Kn= .083  LAG=  88.8
782          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
783          BA    1.46
784          LG     .21     .25    4.50     .45   22.00
785          UI     55.     55.     55.     55.    171.    202.    238.    267.    295.    317.
786          UI    340.    373.    411.    443.    514.    623.    711.    683.    593.    531.
787          UI    486.    450.    417.    376.    344.    316.    283.    262.    227.    181.
788          UI    149.     98.     98.     92.     91.     78.     55.     55.     55.     44.
789          UI     17.     17.     17.     17.     17.     17.     17.     17.     17.     17.
790          UI     17.     17.     17.      0.      0.      0.      0.      0.      0.      0.
791          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

792          KK     D35
793          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME
794          DT   RET35      97
795          DI       0   10000
796          DQ       0   10000
             *
             * DDM   ***** Preserved *****
```



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                                  HEC-1 INPUT

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


797          KK     C35
798          KM   COMBINE FLOWS FROM S35 AND C34 AT SOUTHERN AVE AND THE EMF (BEFORE ENTERING)
799          HC       2
             * ZW A=SOUTHERN AVENUE  B=EMF  C=FLOW  E=5MIN   F=100YR
             *
             * DDM   ***** Preserved *****

800          KK  EMFSTH
801          KM   COMBINE FLOWS FROM C35I AND C28 (FROM BROADWAY RD) WITHIN THE EMF AT
802          KM    SOUTHERN AVE.
803          HC       2
             *
             * DDM   ***** Preserved *****

804          KK   35T41
805          KM   ROUTE FLOWS FROM C35 (SOUTHERN) TO S41 (SUPERSTITIONS FREEWAY)
806          KM   VIA EMF
             * KO      3
807          RS       2    FLOW      -1
808          RC   0.040   0.030   0.040    3000  0.0009
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809          RX       0     115     130     145     220     250     280     395
810          RY      14      12      11       0       0      10      11      14
             * DDM   ***** Updated *****

811          KK     18B
812          KM   BASIN 18B
813          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
814          KM    L=        .9  Lca=        .4   S=   55.6  Kn= .059  LAG=  26.9
815          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
816          BA     .38
817          LG     .26     .27    4.00     .54   26.00
818          UI     47.    142.    245.    321.    473.    536.    386.    287.    203.    101.
819          UI     71.     47.     15.     14.     14.     14.      0.      0.      0.      0.
820          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

821          KK  18BT25
822          KM   ROUTE 18B (AT 80TH ST AND APACHE TRAIL) TO C25 (SOSSAMAN ROAD AND BROADWAY)
823          KM     VIA A CONCRETE CHANNEL
824          RS       3    FLOW      -1
825          RC   0.030   0.015   0.030    5200  0.0114
826          RX       0    1005    1010    1011    1013    1014    1019    2024
827          RY       6       5       5       0       0       5       5       6
             * DDM   ***** Updated *****

828          KK      25
829          KM   BASIN 25
830          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
831          KM    L=       1.3  Lca=        .6   S=   42.3  Kn= .051  LAG=  32.8
832          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
833          BA     .50
834          LG     .24     .25    4.15     .54   37.00
835          UI     52.    110.    228.    295.    370.    517.    620.    462.    368.    286.
1                                          HEC-1 INPUT
PAGE 23

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

836          UI    211.    113.     86.     57.     40.     16.     16.     16.     16.      0.
837          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
838          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

839          KK     C25
840          KM   COMBINE FLOWS FROM SUBBASIN 18B (FROM 80TH ST AND APACHE TRAIL) AND 25 (AT
841          KM    SOSSAMAN ROAD AND BROADWAY ROAD)
842          HC       2
             *
             * DDM   ***** Preserved *****

843          KK   25T33
844          KM   ROUTE FLOWS FROM C25 (SOSSAMAN RD AND BROADWAY) TO C33 ( 72ND ST AND
845          KM     SOUTHERN AVE.) VIA A CONCRETE CHANNEL.
846          RS       5    FLOW      -1
847          RC   0.030   0.015   0.030    7000   0.006
848          RX       0    1005    1010    1011    1013    1014    1019    2024
849          RY       6       5       5       0       0       5       5       6
             *
             * DDM   ***** Updated *****

850          KK      33
851          KM   BASIN 33
852          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
853          KM    L=       2.0  Lca=       1.2   S=   32.5  Kn= .063  LAG=  65.3
854          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
855          BA     .73
856          LG     .23     .25    4.55     .43   28.00
857          UI     38.     38.     38.    125.    152.    180.    205.    226.    254.    287.
858          UI    337.    425.    487.    410.    353.    315.    284.    248.    221.    191.
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859          UI    170.    130.     94.     66.     63.     62.     42.     38.     38.     17.
860          UI     12.     12.     12.     12.     12.     12.     12.     12.      0.      0.
861          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

862          KK     D33
863          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME
864          DT   RET33      50
865          DI       0   10000
866          DQ       0   10000
             *
             * DDM   ***** Preserved *****

867          KK     C33
868          KM   COMBINE FLOWS FROM SUBBASIN 33 AND 25 (AT POWER ROAD AND SOUTHERN AVE.)
869          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 24

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


870          KK   33T40
871          KM   ROUTE FLOWS FROM C33 TO C40 (POWER ROAD AND SUPERSITION FREEWAY)
872          KM    VIA A CONCRETE CHANNEL
873          RS       2    FLOW      -1
874          RC   0.030   0.015   0.030    2500   0.006
875          RX       0    1005    1010    1011    1013    1014    1019    2024
876          RY       6       5       5       0       0       5       5       6
             * DDM   ***** Updated *****

877          KK      40
878          KM   BASIN 40
879          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
880          KM    L=        .8  Lca=        .4   S=   69.7  Kn= .056  LAG=  22.5
881          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
882          BA     .58
883          LG     .22     .28    4.60     .39   41.00
884          UI     87.    341.    517.    768.   1005.    699.    490.    283.    148.     89.
885          UI     31.     27.     27.      0.      0.      0.      0.      0.      0.      0.
886          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

887          KK     C40
888          KM    COMBINE FLOWS FROM S33 AND S40 AT POWER ROAD AND SUPERSTITION FREEWAY
889          HC       2
             *
             * DDM   ***** Preserved *****

890          KK    ADD4
891          KM    BASIN #4 OFF-LINE DETENTION POND
892          DT     DB4
893          DI       0     877     905     980    1066    1161    1266    1375
894          DQ       0       0       5      30      66     111     166     225
             *
             * DDM   ***** Preserved *****

895          KK    ADD3
896          KM    BASIN #3 OFF-LINE DETENTION POND
897          DT     DB3
898          DI       0    1375    1406    1480    1564    1655    1756    1861    1970
899          DQ       0       0       6      30      64     105     156     211     270
             *
             * DDM   ***** Preserved *****

900          KK    ADD2
901          KM    BASIN #2 OFF-LINE DETENTION POND
```

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902          DT     DB2
903          DI       0    1171    1208    1285    1375    1473    1580    1693    1815
904          DQ       0       0       8      35      75     124     180     243     315
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 25

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


905          KK    ADD1
906          KM    BASIN #1 OFF-LINE DETENTION POND
907          DT     DB1
908          DI       0    1158    1285    1336    1363    1365    1381    1420
909          DQ       0       0      30      47      57      58      88      98
             *
             * DDM   ***** Preserved *****

910          KK   40T41
911          KM   ROUTE SUBBASIN 40 TO C41 (POWER ROAD TO EMF) VIA A CONCRETE CHANNEL
912          RS       3    FLOW      -1
913          RC   0.030   0.015   0.030    5100   0.006
914          RX       0    1005    1010    1011    1013    1014    1019    2024
915          RY       6       5       5       0       0       5       5       6
             * DDM   ***** Updated *****

916          KK      41
917          KM   BASIN 41
918          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
919          KM    L=      1.4  Lca=       .7   S=   28.2  Kn= .059  LAG=  44.0
920          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
921          BA     .55
922          LG     .18     .28    4.45     .47   48.00
923          UI     42.     42.    143.    191.    232.    271.    325.    435.    525.    416.
924          UI    347.    292.    243.    202.    144.     87.     71.     59.     42.     32.
925          UI     13.     13.     13.     13.     13.     13.      0.      0.      0.      0.
926          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

927          KK     D41
928          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME
929          DT   RET41      55
930          DI       0   10000
931          DQ       0   10000
             *
             * DDM   ***** Preserved *****

932          KK     C41
933          KM   COMBINE FLOWS FROM S41 AND S40 (AT SUPERSTITION FREEWAY BEFORE ENTERING
934          KM    THE EMF)
935          HC       2
             * ZW A=SUPERSTITION FREEWAY  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

936          KK  EMFSPR
937          KM    COMBINE FLOWS FROM C41 AND C35 (AT SUPERSTITION IN THE EMF)
938          HC       2
939          ZZ
1
        SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   73          9
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 88          .          4
             .          V
             .          V
100          .        4T8
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107          .          .          8
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120          .         C8...........
             .          .
             .          .
126     EMFHOB...........
             V
             V
130      C9T15
             .
             .
136          .          3
             .          .
             .          .
150          .          .-------->    RET3
148          .         D3
             .          V
             .          V
153          .        3T7
             .          .
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160          .          .          7
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             .          .          .
171          .         C7...........
             .          V
             .          V
175          .       7T10
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182          .          .         10
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             .          .          .
195          .          .          .-------->   RET10
193          .          .        D10
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198          .        C10...........
             .          V
             .          V
202          .      10T8A
             .          .
             .          .
209          .          .         8A
             .          .          .
             .          .          .
220          .        C8A...........
             .          V
             .          V
224          .     8AT15A
             .          .
             .          .
231          .          .        15A
             .          .          .
             .          .          .
242          .       C15A...........
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             .          .
246     EMFBRN...........
             V
             V
250     15AT15
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257          .          15B
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268     EMFCLB............
             V
             V
272      15T16
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279          .            1
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294          .            .------->     D1W
290          .          D1S
             .            V
             .            V
297          .          1T5
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304          .            .            5
             .            .            .
             .            .            .
315          .           C5............
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             .            .
324          .            .------->     D5S
320          .          DC5
             .            V
             .            V
327          .          5T6
             .            .
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334          .            .            2
             .            .            V
             .            .            V
346          .            .           2T6
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353          .            .            .            6
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366          .            .            .            .            .<-------     D1W
364          .            .            .            .          GD1
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             .            .            .            .            V
367          .            .            .            .         RGD1A
             .            .            .            .            V
             .            .            .            .            V
374          .            .            .            .         RGD1B
             .            .            .            .            .
             .            .            .            .            .
381          .           C6.................................
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             .            .
389          .            .------->     D6W
385          .          DC6
             .            V
             .            V
392          .        6T13B
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399          .            .           11
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             .            .            .
418          .            .            .------->    D11S
413          .            .          D11
             .            .            V
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421          .            .         11T12
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428                                  12
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442                                   .<-------     D5S
440                                GD5S
                                     V
                                     V
443                               RGD5A
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450                        C12.......................
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458                              .------->    D12S
454                        DC12
                                V
                                V
461                      12T13A
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468                              .         13A
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479                        C13A............
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                                 .
485                              .------->   BASIN
483                      UNIVBA
                                 .
                                 .
491                              .------->   D13AS
488                        D13A
                                 .
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494                              .         13B
                                 .          .
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505                  C13B........................
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                        .
510                     .------->   D13BS
508                  D13B
                        V
                        V
513                RD13BW
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                        .
518                     .<-------     D6W
516                     GD6W
                        V
                        V
519                  R6WT14
                        .
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526                     .          14
                        .           .
                        .           .
539                     .           .------->    D14S
537                     .         D14
                        .           .
                        .           .
542                  C14........................
                        V
                        V
546                RD14W
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550                     .         16
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560                  C16............
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563       EMFUNV............
                V
                V
566        16T21
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575             .           .<-------   D13AS
573             .      GD13AS
                .           V
                .           V
576             .      13AT21
                .           .
                .           .
585             .           .           .<-------   D13BS
583             .           .      GD13BS
                .           .           V
                .           .           V
586             .           .      13BT21
                .           .           .
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595             .           .           .           .<-------    D14S
593             .           .           .       GD14S
                .           .           .           V
                .           .           .           V
596             .           .           .       14T21
                .           .           .           .
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603             .           .           .           .           21
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614             .         C21.................................
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618       EMFAPC............
                V
                V
621        21T28
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628             .          19
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641             .           .           .<-------    D11S
639             .           .       GD11S
                .           .           V
                .           .           V
642             .           .        RD11
                .           .           .
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651             .           .           .           .<-------    D12S
649             .           .           .       GD12S
                .           .           .           V
                .           .           .           V
652             .           .           .        RD12
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659             .         C19......................
                .           V
                .           V
662             .        19T27
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669             .           .          27
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679             .         C27............
                .           V
                .           V
683             .        27T28
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691             .           .          20
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702             .           .       20T28
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709             .           .           .          28
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720             .         C28.......................
                .           .
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724       EMFBRD............
               V
               V
727        28T35
                .
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734             .          26
                .           V
                .           V
744             .       26T34
                .           .
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751             .           .          34
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765             .           .           .------->   RET34
763             .           .         D34
                .           .           .
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768             .         C34............
                .           V
                .           V
771             .       34T35
                .           .
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778             .           .          35
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                .           .           .
794             .           .           .------->   RET35
792             .           .         D35
                .           .           .
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797             .         C35............
                .           .
                .           .
800       EMFSTH............
               V
               V
804        35T41
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811             .         18B
                .           V
                .           V
821             .      18BT25
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828             .           .          25
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839             .         C25............
                .           V
                .           V
843             .       25T33
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850             .           .          33
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 864            .           .           .-------->   RET33
 862            .           .        D33
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 867            .        C33............
                .          V
                .          V
 870            .      33T40
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 877            .           .        40
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 887            .        C40............
                .           .
                .           .
 892            .           .-------->     DB4
 890            .      ADD4
                .           .
                .           .
 897            .           .-------->     DB3
 895            .      ADD3
                .           .
                .           .
 902            .           .-------->     DB2
 900            .      ADD2
                .           .
                .           .
 907            .           .-------->     DB1
 905            .      ADD1
                .          V
                .          V
 910            .      40T41
                .           .
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 916            .           .        41
                .           .           .
                .           .           .
 929            .           .           .-------->   RET41
 927            .           .        D41
                .           .           .
                .           .           .
 932            .        C41............
                .           .
                .           .
 936       EMFSPR............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUL   1997               *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   25JUN98  TIME  08:41:23   *
*                                       *
*****************************************
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```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROADS TO THE EAST
ALL THE HYDROGRAPHS ENTERING INTO THE EMF ARE SENT TO TAPE 21

ALL STREET ROUTINGS HAVE N VALUES OF .015 FOR ASPHALT AND .03 FOR OVERLAND FLOWS

EAST MARICOPA COUNTY AREA DRAINAGE MASTER STUDY - PHASE 2
THIS AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROAD TO THE EAST, MCDOWELL ROAD TO THE NORTH AND THE SUPERSTITION FREEWAY TO THE SOUTH

FILENAME: PHASE2.DAT

DDMS FILE FAMILY NAME: PHASE2

THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 18.60 SQ. MI.
THIS MODEL USES THE REVISED LAND USE AND A Kn VALUE OF 0.09 FOR DESERT LAND USES

THIS MODEL WAS REVISED TO ESTABLISH CONCENTRATION POINTS AND HYDROGRAPHS ENTERING INTO THE EMF.
INITIAL REVISION IN MARCH 1997

100-YEAR 24-HOUR FREQUENCY

METHODOLOGY:
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS DATED 1994
THE NOAA TECHNICAL MEMORANDUM NWS HYDRO-40 DEPTH AREA RATIOS

STUDY INITIALLY PERFORMED BY LISA C. YOUNG
REVISED BY VALERIE A. SWICK
HYDROLOGY BRANCH, ENGINEERING DISTRICT,
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, SPRING 1996

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 5FT/SEC FOR CONCRETE CHANNEL

THIS MODEL DOES NOT REFLECT THE STORM DRAINS IN THE AREA AS THEY HAVE A LOW CAPACITY AND OUTLET AT THE SAME LOCATION AS SURFACE FLOW

LAST UPDATED ON 3/13/98

DDM MCUHP2 Phase 2 model, north of Superstition Freeway

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

```
IT          HYDROGRAPH TIME DATA
                 NMIN            5  MINUTES IN COMPUTATION INTERVAL
                IDATE       1APR97  STARTING DATE
                ITIME         0000  STARTING TIME
                   NQ         1000  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE       4APR97  ENDING DATE
               NDTIME         1115  ENDING TIME
               ICENT            19  CENTURY MARK

          COMPUTATION INTERVAL      .08 HOURS
               TOTAL TIME BASE    83.25 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

 56 JD      INDEX STORM NO. 1
                 STRM        3.60  PRECIPITATION DEPTH
                 TRDA         .01  TRANSPOSITION DRAINAGE AREA

 57 PI        PRECIPITATION PATTERN
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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 67 JD      INDEX STORM NO. 2
                 STRM        3.58  PRECIPITATION DEPTH
                 TRDA        1.00  TRANSPOSITION DRAINAGE AREA

  0 PI        PRECIPITATION PATTERN
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
.00     .00     .00     .00     .00     .00     .00     .00     .00     .00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00		

68 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

69 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

70 JD INDEX STORM NO. 5

STRM 3.24 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

71 JD INDEX STORM NO. 6

STRM 3.10 PRECIPITATION DEPTH

TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

72 JD INDEX STORM NO. 7

STRM 3.05 PRECIPITATION DEPTH

TRDA 90.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

1

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								
+		9	132.	13.58	37.	9.	3.	.44	
	HYDROGRAPH AT								
+		4	769.	12.75	162.	51.	17.	1.00	
	ROUTED TO								

+	4T8	627.	13.17	162.	50.	17.	1.00
HYDROGRAPH AT +	8	300.	12.92	62.	17.	6.	.50
2 COMBINED AT +	C8	850.	13.08	222.	67.	22.	1.50
2 COMBINED AT +	EMFHOB	922.	13.08	257.	76.	25.	1.94
ROUTED TO +	C9T15	882.	13.42	256.	75.	25.	1.94
HYDROGRAPH AT +	3	660.	12.92	146.	43.	14.	1.00
DIVERSION TO +	RET3	660.	12.92	146.	42.	14.	1.00
HYDROGRAPH AT +	D3	9.	20.00	6.	2.	1.	1.00
ROUTED TO +	3T7	8.	21.00	6.	2.	1.	1.00
HYDROGRAPH AT +	7	218.	12.58	34.	9.	3.	.28
2 COMBINED AT +	C7	216.	12.58	34.	11.	4.	1.28
ROUTED TO +	7T10	171.	13.00	34.	11.	4.	1.28
HYDROGRAPH AT +	10	626.	12.58	105.	31.	10.	.72
DIVERSION TO +	RET10	626.	12.58	92.	25.	8.	.72
HYDROGRAPH AT +	D10	150.	13.17	21.	7.	2.	.72
2 COMBINED AT +	C10	238.	13.17	51.	16.	5.	2.00
ROUTED TO +	10T8A	240.	13.33	51.	16.	5.	2.00
HYDROGRAPH AT +	8A	103.	12.50	13.	3.	1.	.12
2 COMBINED AT +	C8A	242.	13.33	63.	19.	6.	2.12
ROUTED TO +	8AT15A	226.	13.42	63.	19.	6.	2.12
HYDROGRAPH AT +	15A	367.	12.42	53.	16.	5.	.35
2 COMBINED AT +	C15A	530.	12.50	112.	34.	12.	2.47
2 COMBINED AT +	EMFBRN	1087.	13.42	361.	107.	36.	4.41
ROUTED TO +	15AT15	1071.	13.50	361.	107.	36.	4.41

+	HYDROGRAPH AT 15B	491.	12.50	79.	24.	8.	.51
+	2 COMBINED AT EMFCLB	1105.	13.50	433.	130.	44.	4.92
+	ROUTED TO 15T16	1098.	13.58	433.	130.	44.	4.92
+	HYDROGRAPH AT 1	364.	12.42	43.	11.	4.	.39
+	DIVERSION TO D1W	150.	12.08	29.	8.	3.	.39
+	HYDROGRAPH AT D1S	214.	12.42	14.	4.	1.	.39
+	ROUTED TO 1T5	195.	12.58	14.	4.	1.	.39
+	HYDROGRAPH AT 5	765.	12.50	120.	35.	12.	.95
+	2 COMBINED AT C5	942.	12.58	133.	39.	13.	1.15
+	DIVERSION TO D5S	350.	12.17	91.	28.	9.	1.15
+	HYDROGRAPH AT DC5	592.	12.58	42.	11.	4.	1.15
+	ROUTED TO 5T6	411.	13.00	42.	11.	4.	1.15
+	HYDROGRAPH AT 2	599.	12.83	122.	35.	12.	1.00
+	ROUTED TO 2T6	481.	13.50	122.	35.	12.	1.00
+	HYDROGRAPH AT 6	880.	12.50	148.	45.	15.	1.00
+	HYDROGRAPH AT GD1	150.	12.08	29.	8.	3.	.39
+	ROUTED TO RGD1A	122.	13.42	29.	8.	3.	.39
+	ROUTED TO RGD1B	119.	13.58	29.	8.	3.	.39
+	4 COMBINED AT C6	1358.	12.58	332.	96.	32.	2.76
+	DIVERSION TO D6W	400.	12.17	184.	59.	20.	2.76
+	HYDROGRAPH AT DC6	958.	12.58	148.	37.	12.	2.76
+	ROUTED TO 6T13B	811.	13.00	148.	37.	12.	2.76
+	HYDROGRAPH AT 11	391.	13.25	99.	26.	9.	1.06
+	DIVERSION TO D11S	250.	13.00	89.	24.	8.	1.06

+	HYDROGRAPH AT D11	141.	13.25	10.	3.	1.	1.06
+	ROUTED TO 11T12	136.	13.42	10.	3.	1.	1.06
+	HYDROGRAPH AT 12	624.	12.83	134.	41.	14.	1.03
+	HYDROGRAPH AT GD5S	350.	12.17	91.	28.	9.	1.15
+	ROUTED TO RGD5A	339.	13.25	91.	28.	9.	1.15
+	3 COMBINED AT C12	922.	12.83	231.	71.	24.	2.13
+	DIVERSION TO D12S	300.	12.17	131.	45.	15.	2.13
+	HYDROGRAPH AT DC12	622.	12.83	100.	25.	8.	2.13
+	ROUTED TO 12T13A	572.	13.08	100.	25.	8.	2.13
+	HYDROGRAPH AT 13A	583.	12.58	102.	31.	10.	.77
+	2 COMBINED AT C13A	917.	12.67	200.	55.	18.	2.27
+	DIVERSION TO BASIN	810.	12.50	58.	16.	5.	2.27
+	HYDROGRAPH AT UNIVBA	917.	12.67	151.	39.	13.	2.27
+	DIVERSION TO D13AS	910.	12.67	144.	36.	12.	2.27
+	HYDROGRAPH AT D13A	7.	12.58	7.	3.	1.	2.27
+	HYDROGRAPH AT 13B	222.	12.42	33.	10.	3.	.23
+	3 COMBINED AT C13B	877.	12.92	188.	51.	17.	2.15
+	DIVERSION TO D13BS	758.	12.92	136.	34.	11.	2.15
+	HYDROGRAPH AT D13B	119.	12.17	51.	17.	6.	2.15
+	ROUTED TO RD13BW	121.	12.25	51.	17.	6.	2.15
+	HYDROGRAPH AT GD6W	400.	12.17	184.	59.	20.	2.76
+	ROUTED TO R6WT14	396.	14.42	184.	59.	20.	2.76
+	HYDROGRAPH AT 14	957.	12.50	150.	46.	15.	1.00
	DIVERSION TO						

+	D14S	599.	12.50	49.	12.	4.	1.00
HYDROGRAPH AT +	D14	358.	12.08	101.	34.	11.	1.00
3 COMBINED AT +	C14	597.	12.83	334.	109.	36.	2.16
ROUTED TO +	RD14W	589.	12.83	333.	108.	36.	2.16
HYDROGRAPH AT +	16	128.	12.17	12.	3.	1.	.09
2 COMBINED AT +	C16	640.	12.25	347.	113.	38.	.64
2 COMBINED AT +	EMFUNV	1635.	12.75	768.	239.	80.	5.56
ROUTED TO +	16T21	1528.	13.92	761.	238.	80.	5.56
HYDROGRAPH AT +	GD13AS	910.	12.67	144.	36.	12.	2.27
ROUTED TO +	13AT21	728.	13.75	144.	36.	12.	2.27
HYDROGRAPH AT +	GD13BS	758.	12.92	136.	34.	11.	2.15
ROUTED TO +	13BT21	654.	13.67	136.	34.	11.	2.15
HYDROGRAPH AT +	GD14S	599.	12.50	49.	12.	4.	1.00
ROUTED TO +	14T21	489.	12.67	49.	12.	4.	1.00
HYDROGRAPH AT +	21	431.	12.58	78.	24.	8.	.53
4 COMBINED AT +	C21	1336.	13.67	376.	99.	33.	6.23
2 COMBINED AT +	EMFAPC	2675.	13.75	1072.	319.	108.	11.79
ROUTED TO +	21T28	2654.	13.83	1070.	318.	108.	11.79
HYDROGRAPH AT +	19	661.	12.50	111.	34.	12.	.76
HYDROGRAPH AT +	GD11S	250.	13.00	89.	24.	8.	1.06
ROUTED TO +	RD11	250.	13.92	89.	24.	8.	1.06
HYDROGRAPH AT +	GD12S	300.	12.17	131.	45.	15.	2.13
ROUTED TO +	RD12	300.	13.58	131.	45.	15.	2.13
3 COMBINED AT +	C19	940.	12.50	325.	103.	34.	1.93

+	ROUTED TO 19T27	823.	12.83	325.	103.	34.	1.93
+	HYDROGRAPH AT 27	327.	12.17	37.	12.	4.	.24
+	2 COMBINED AT C27	849.	12.83	360.	114.	38.	2.17
+	ROUTED TO 27T28	836.	13.00	360.	114.	38.	2.17
+	HYDROGRAPH AT 20	485.	12.67	99.	32.	11.	.58
+	ROUTED TO 20T28	426.	12.92	99.	32.	11.	.58
+	HYDROGRAPH AT 28	792.	12.58	146.	46.	15.	.90
+	3 COMBINED AT C28	1715.	12.67	593.	188.	63.	3.65
+	2 COMBINED AT EMFBRD	3293.	13.75	1597.	488.	165.	15.44
+	ROUTED TO 28T35	3276.	14.00	1596.	488.	165.	15.44
+	HYDROGRAPH AT 26	341.	12.17	37.	12.	4.	.25
+	ROUTED TO 26T34	154.	13.25	37.	12.	4.	.25
+	HYDROGRAPH AT 34	582.	12.83	130.	39.	13.	.90
+	DIVERSION TO RET34	582.	12.83	93.	25.	8.	.90
+	HYDROGRAPH AT D34	374.	13.25	48.	14.	5.	.90
+	2 COMBINED AT C34	514.	13.25	81.	25.	8.	1.15
+	ROUTED TO 34T35	265.	14.42	81.	25.	8.	1.15
+	HYDROGRAPH AT 35	689.	13.25	195.	58.	19.	1.46
+	DIVERSION TO RET35	689.	13.25	182.	49.	16.	1.46
+	HYDROGRAPH AT D35	96.	14.75	28.	9.	3.	1.46
+	2 COMBINED AT C35	252.	14.42	98.	32.	11.	2.61
+	2 COMBINED AT EMFSTH	3423.	14.00	1645.	507.	172.	18.05
+	ROUTED TO 35T41	3412.	14.08	1644.	506.	172.	18.05
+	HYDROGRAPH AT 18B	414.	12.33	51.	15.	5.	.38

+	ROUTED TO	18BT25	262.	12.75	51.	15.	5.	.38
+	HYDROGRAPH AT	25	521.	12.42	78.	25.	8.	.50
+	2 COMBINED AT	C25	732.	12.42	129.	40.	13.	.88
+	ROUTED TO	25T33	455.	13.33	129.	40.	13.	.88
+	HYDROGRAPH AT	33	462.	12.92	106.	32.	11.	.73
+	DIVERSION TO	RET33	462.	12.92	94.	25.	8.	.73
+	HYDROGRAPH AT	D33	131.	13.75	23.	7.	2.	.73
+	2 COMBINED AT	C33	457.	13.75	144.	46.	16.	1.61
+	ROUTED TO	33T40	425.	13.92	144.	46.	16.	1.61
+	HYDROGRAPH AT	40	809.	12.25	99.	31.	10.	.58
+	2 COMBINED AT	C40	919.	12.25	239.	77.	26.	2.19
+	DIVERSION TO	DB4	10.	12.25	0.	0.	0.	2.19
+	HYDROGRAPH AT	ADD4	909.	12.25	239.	77.	26.	2.19
+	DIVERSION TO	DB3	0.	.00	0.	0.	0.	2.19
+	HYDROGRAPH AT	ADD3	909.	12.25	239.	77.	26.	2.19
+	DIVERSION TO	DB2	0.	.00	0.	0.	0.	2.19
+	HYDROGRAPH AT	ADD2	909.	12.25	239.	77.	26.	2.19
+	DIVERSION TO	DB1	0.	.00	0.	0.	0.	2.19
+	HYDROGRAPH AT	ADD1	909.	12.25	239.	77.	26.	2.19
+	ROUTED TO	40T41	500.	12.83	239.	77.	26.	2.19
+	HYDROGRAPH AT	41	503.	12.58	97.	32.	11.	.55
+	DIVERSION TO	RET41	503.	12.58	97.	28.	9.	.55
+	HYDROGRAPH AT	D41	18.	15.42	12.	4.	1.	.55
	2 COMBINED AT							

```
+                          C41       500.   12.83        241.        80.        27.       2.74

        2 COMBINED AT
+                       EMFSPR      3694.   14.17       1822.       568.       193.      20.79
1
                                   SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                       (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                      COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                    PEAK                                     PEAK

                              (MIN)     (CFS)     (MIN)      (IN)     (MIN)     (CFS)     (MIN)       (IN)

        FOR STORM = 1  STORM AREA (SQ MI) =        .01
          RD13BW  MANE         5.00    122.44    735.00       .29      5.00    122.44    735.00        .29

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3343E+02 EXCESS= .0000E+00 OUTFLOW= .3342E+02 BASIN STORAGE= .1060E-02
PERCENT ERROR=    .0

        FOR STORM = 2  STORM AREA (SQ MI) =       1.00
          RD13BW  MANE         5.00    121.85    735.00       .29      5.00    121.85    735.00        .29

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3329E+02 EXCESS= .0000E+00 OUTFLOW= .3328E+02 BASIN STORAGE= .1055E-02
PERCENT ERROR=    .0

        FOR STORM = 3  STORM AREA (SQ MI) =       5.00
          RD13BW  MANE         5.00    120.74    740.00       .28      5.00    120.74    740.00        .28

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3265E+02 EXCESS= .0000E+00 OUTFLOW= .3264E+02 BASIN STORAGE= .1036E-02
PERCENT ERROR=    .0

        FOR STORM = 4  STORM AREA (SQ MI) =      10.00
          RD13BW  MANE         5.00    121.48    740.00       .28      5.00    121.48    740.00        .28

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3207E+02 EXCESS= .0000E+00 OUTFLOW= .3205E+02 BASIN STORAGE= .1012E-02
PERCENT ERROR=    .0

        FOR STORM = 5  STORM AREA (SQ MI) =      30.00
          RD13BW  MANE         5.00    122.41    740.00       .27      5.00    122.41    740.00        .27

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3104E+02 EXCESS= .0000E+00 OUTFLOW= .3103E+02 BASIN STORAGE= .9448E-03
PERCENT ERROR=    .0

        FOR STORM = 6  STORM AREA (SQ MI) =      60.00
          RD13BW  MANE         5.00    120.57    745.00       .26      5.00    120.57    745.00        .26

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3001E+02 EXCESS= .0000E+00 OUTFLOW= .3000E+02 BASIN STORAGE= .9145E-03
PERCENT ERROR=    .0

        FOR STORM = 7  STORM AREA (SQ MI) =      90.00
          RD13BW  MANE         5.00    121.01    745.00       .26      5.00    121.01    745.00        .26

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2959E+02 EXCESS= .0000E+00 OUTFLOW= .2958E+02 BASIN STORAGE= .9036E-03
PERCENT ERROR=    .0

        FOR STORM = 1  STORM AREA (SQ MI) =        .01
```

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RD14W  MANE        3.54    591.27    772.37      1.90      5.00    589.96    770.00        1.90

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2194E+03 EXCESS= .0000E+00 OUTFLOW= .2189E+03 BASIN STORAGE= .4872E-03
PERCENT ERROR=    .2

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
RD14W  MANE        3.54    590.02    772.45      1.89      5.00    589.47    770.00        1.89

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2186E+03 EXCESS= .0000E+00 OUTFLOW= .2181E+03 BASIN STORAGE= .4823E-03
PERCENT ERROR=    .2

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
RD14W  MANE        3.55    588.73    769.28      1.86      5.00    587.69    770.00        1.86

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2150E+03 EXCESS= .0000E+00 OUTFLOW= .2145E+03 BASIN STORAGE= .5094E-03
PERCENT ERROR=    .2

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
RD14W  MANE        3.55    587.87    769.89      1.82      5.00    587.39    770.00        1.82

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2107E+03 EXCESS= .0000E+00 OUTFLOW= .2101E+03 BASIN STORAGE= .5263E-03
PERCENT ERROR=    .3

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
RD14W  MANE        3.55    580.65    770.65      1.77      5.00    580.51    770.00        1.77

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2047E+03 EXCESS= .0000E+00 OUTFLOW= .2042E+03 BASIN STORAGE= .4832E-03
PERCENT ERROR=    .3

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
RD14W  MANE        3.55    578.75    767.77      1.72      5.00    573.76    765.00        1.72

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1987E+03 EXCESS= .0000E+00 OUTFLOW= .1981E+03 BASIN STORAGE= .4927E-03
PERCENT ERROR=    .3

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
RD14W  MANE        3.56    578.27    767.98      1.70      5.00    572.89    765.00        1.70

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1964E+03 EXCESS= .0000E+00 OUTFLOW= .1958E+03 BASIN STORAGE= .4797E-03
PERCENT ERROR=    .3


*** NORMAL END OF HEC-1 ***
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APPENDIX D-3

SOUTHERN MESA AREA
100-YEAR, 24-HOUR STORM
EXISTING LAND USE CONDITIONS
HEC-1 MODEL

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   25JUN98  TIME  08:40:08  *
 *                                      *
 ****************************************
```

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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X               X
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

1 HEC-1 INPUT

PAGE 1

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

  1           ID   SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
  2           ID   AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
  3           ID   MARCH 1998
  4           ID   SOUTHEAST MESA HIGH RESOLUTION MODEL
  5           ID
  6           ID   FILENAME:  SEMP100S.DAT
  7           ID
  8           ID   THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
  9           ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 73 SQ. MI.
 10           ID   THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
 11           ID   CONDITIONS.
 12           ID
 13           ID   100-YEAR 24-HOUR FREQUENCY
 14           ID
 15           ID   THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
 16           ID   AND EAST OF THE CAP
 17           ID
 18           ID   METHODOLOGY
 19           ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
 20           ID   SCS TYPE II RAINFALL DISTRIBUTION
 21           ID   S-GRAPH HYDROGRAPH
 22           ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 23           ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 24           ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 25           ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
 26           ID   DATED 1994
 27           ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
 28           ID
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 29          ID   STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
 30          ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
 31          ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
 32          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
 33          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
 34          ID
 35          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
 36          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
 37          ID
 38          ID
 39          ID   NOTE: MUST USE SEMP100N.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS SUPERSTITN
 40          ID
 41          ID
 42          ID     LAST UPDATED ON  6/02/98
 43          ID
 44          ID
 45          ID   DDM MCUHP2 SOUTH EAST MESA ADMP - SOUTH OF SUPERSTITION FREEWAY
             *DIAGRAM
 46          IT       5  1APR97    0000    1000
 47          IO       5
 48          IN      15
 49          JD    3.60    0.01
 50          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 51          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 52          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 53          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 54          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
1                                          HEC-1 INPUT
PAGE  2

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

 55          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 56          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 57          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 58          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 59          PC    .983    .986    .989    .992    .995    .998   1.000
 60          JD    3.58    1.00
 61          JD    3.49    5.00
 62          JD    3.38   10.00
 63          JD    3.24   30.00
 64          JD    3.10   60.00
 65          JD    3.05   90.00
             *
             * DDM   ***** Preserved *****

 66          KK    SOSS
 67          KM   INFLOW FROM SOSSAMAN BASIN VIA SOSSAMAN CHANNEL
 68          KM   QI CARDS ARE BASED ON THE PEAK OF 1800CFS TO SOSSAMAN CHANNEL
             * KO     1
 69          BA   12.50
 70          ZR  =QI A=SOSSAMAN DRAIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
             *
             * DDM   ***** Preserved *****

 71          KK   RSOSS
 72          KM   ROUTE FLOWS VIA SOSSAMAN CHANNEL TO BASELINE ROAD
 73          RS       2    FLOW      -1
 74          RC    .030    .025    .030    3500    .005
 75          RX       0       5      10      35      75     110     115     120
 76          RY      10      10      10       4       4      10      10      10
             * DDM   ***** Updated *****

 77          KK     59A
 78          KM   BASIN 59A
 79          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 80          KM    L=        .9  Lca=        .3   S=   34.9  Kn= .071  LAG=  30.2
 81          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 82          BA     .26
 83          LG     .24     .25    4.55     .41   32.00
 84          UI     30.     74.    140.    180.    235.    354.    298.    230.    176.    131.
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 85          UI     68.     50.     32.     19.      9.      9.      9.      9.      0.      0.
 86          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

 87          KK    C59A
 88          KM    SOSSAMAN DRAIN AT BASELINE ROAD
 89          HC       2
             * DDM   ***** Preserved *****

 90          KK  59A59B
 91          KM   ROUTE S59A TO 59B VIA SOSSAMAN CHANNEL
 92          KM   BLOCK WALL ON LEFT BANK, SOSSAMAN ROAD ON RIGHT BANK
 93          RS       4    FLOW      -1
 94          RC    .025    .018    .013    6500   .0015
 95          RX       0       3      13      38      78     103     128     203
 96          RY      16      10      10       0       0      10       8      10
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE  3

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

 97          KK     59B
 98          KM   BASIN 59B
 99          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
100          KM    L=      1.2  Lca=       .7   S=   33.9  Kn= .095  LAG=  63.7
101          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
102          BA     .94
103          LG     .24     .26    4.65     .38   19.00
104          UI     50.     50.     57.    168.    206.    243.    275.    304.    345.    388.
105          UI    471.    602.    618.    511.    445.    400.    354.    310.    273.    240.
106          UI    202.    147.     94.     86.     81.     67.     50.     50.     32.     15.
107          UI     15.     15.     15.     15.     15.     15.     15.     15.      0.      0.
108          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

109          KK    C59B
110          KM   SOSSAMAN CHANNEL AT GUADALUPE ROAD
111          HC       2
             *
             * DDM   ***** Preserved *****

112          KK  59BT60
113          KM     ROUTE 59B TO 60 GUADALUPE CHANNEL.  Assumed v=5ft/sec for NSTP calculation
114          RS       4    FLOW      -1
115          RC     .02    .013     .02    5500    .005
116          RX       0     518     522     522     560     560     580    2580
117          RY     8.5     8.5     8.5       0       0       8       7       6
             * DDM   ***** Updated *****

118          KK      60
119          KM   BASIN 60
120          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
121          KM    L=      2.4  Lca=      1.4   S=   31.8  Kn= .102  LAG= 120.0
122          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
123          BA    2.30
124          LG     .22     .26    4.65     .39   20.00
125          UI     65.     65.     65.     65.     65.    136.    212.    241.    266.    300.
126          UI    317.    346.    363.    383.    406.    434.    467.    494.    528.    591.
127          UI    675.    766.    860.    811.    724.    661.    612.    574.    541.    514.
128          UI    483.    447.    417.    391.    369.    337.    316.    299.    263.    232.
129          UI    186.    162.    114.    114.    113.    106.    106.    106.     71.     65.
130          UI     65.     65.     65.     50.     20.     20.     20.     20.     20.     20.
131          UI     20.     20.     20.     20.     20.     20.     20.     20.     20.     20.
132          UI     20.      0.      0.      0.      0.      0.      0.      0.      0.      0.
133          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
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 134          KK     R60
 135          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
 136          DT     D60     100
 137          DI       0   10000
 138          DQ       0   10000
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  4

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


 139          KK  EMFGUA
 140          KM     COMBINE S59 AND S60 AT EMF, GUADALUPE ROAD
 141          HC       2
              *
              * DDM   ***** Preserved *****

 142          KK  GUATEL
 143          KM   ROUTE EMF FLOW FROM GUADALUPE ROAD TO ELLIOT ROAD
 144          RS       3    FLOW      -1
 145          RC     .03    .022     .03    6000   .0003
 146          RX       0     500     520     553     693     726     740     742
 147          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Updated *****

 148          KK      64
 149          KM   BASIN 64
 150          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 151          KM    L=       1.2  Lca=       .6   S=   25.4  Kn= .104  LAG=  70.1
 152          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 153          BA     .81
 154          LG     .34     .34    4.70     .26     .00
 155          UI     39.     39.     39.    108.    145.    181.    201.    223.    245.    276.
 156          UI    307.    366.    456.    505.    424.    369.    331.    302.    266.    238.
 157          UI    212.    187.    161.    120.     84.     69.     65.     64.     42.     39.
 158          UI     39.     21.     12.     12.     12.     12.     12.     12.     12.     12.
 159          UI     12.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 160          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 161          KK  EMFELL
 162          KM     COMBINE CP2 AND S64 AT EMF, ELLIOT ROAD
 163          HC       2
              *
              * DDM   ***** Preserved *****

 164          KK  ELTWAR
 165          KM   ROUTE EMF FLOW AT ELLIOT ROAD TO WARNER ROAD VIA THE EMF
 166          RS       2    FLOW      -1
 167          RC     .03    .022     .03    5500   .0003
 168          RX       0     500     520     553     693     726     740     742
 169          RY      14      12      11       0       0      11      11      12
              * DDM   ***** Updated *****

 170          KK     61A
 171          KM   BASIN 61A
 172          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 173          KM    L=        .9  Lca=       .4   S=   36.8  Kn= .078  LAG=  40.3
 174          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 175          BA     .52
 176          LG     .36     .29    4.20     .51   10.00
 177          UI     43.     58.    160.    215.    256.    310.    393.    544.    455.    369.
 178          UI    306.    250.    202.    139.     77.     71.     48.     43.     14.     13.
 179          UI     13.     13.     13.     13.      0.      0.      0.      0.      0.      0.
1                                          HEC-1 INPUT
PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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180          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

181          KK   61ATB
182          KM   ROUTING 61A TO 61B VIA ELLSWORTH ROAD
183          RS       6    FLOW      -1
184          RC    .035    .024    .035    5280    .008
185          RX       0     500     750     752     802     852    1102    1602
186          RY       3       2     1.5     1.2     1.2     1.5       2       3
             * DDM   ***** Updated *****

187          KK     61B
188          KM   BASIN 61B
189          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
190          KM    L=      1.4  Lca=       .7   S=   39.7  Kn= .099  LAG=  70.8
191          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
192          BA    1.09
193          LG     .48     .26    4.80     .43     .00
194          UI     52.     52.     52.    140.    192.    238.    267.    295.    324.    364.
195          UI    403.    477.    593.    679.    580.    501.    448.    410.    364.    323.
196          UI    288.    256.    223.    172.    125.     92.     88.     85.     65.     52.
197          UI     52.     40.     16.     16.     16.     16.     16.     16.     16.     16.
198          UI     16.     16.      0.      0.      0.      0.      0.      0.      0.      0.
199          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

200          KK   CP61B
201          KM   COMBINE FLOWS FROM S61A AND S61B
202          HC       2
             * DDM   ***** Preserved *****

203          KK  61T62E
204          KM    ROUTE S61B TO S62E. WASH CROSSING ELLSWORTH AT STAFF GAUGE
205          RS       4    FLOW      -1
206          RC    0.45    0.04    0.45    3500  0.0057
207          RX       0     500     980    1006    1012    1035    1515    2015
208          RY       5     4.5       4       0       0       4     4.5       5
             *
             * DDM   ***** Updated *****

209          KK     62E
210          KM   BASIN 62E
211          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
212          KM    L=       .6  Lca=       .3   S=   31.9  Kn= .088  LAG=  35.9
213          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
214          BA     .15
215          LG     .34     .35    4.65     .28    2.00
216          UI     14.     26.     59.     77.     94.    119.    173.    154.    121.     98.
217          UI     78.     59.     33.     24.     18.     14.      5.      4.      4.      4.
218          UI      4.      0.      0.      0.      0.      0.      0.      0.      0.      0.
219          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
```



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                                        HEC-1 INPUT

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


220          KK    C62E
221          KM   COMBINE FLOWS FROM SUBBASIN 61 AND 62E
222          HC       2
             * DDM   ***** Preserved *****

223          KK   62ETF
224          KM   ROUTE SUBBASIN 62E TO 62F VIA WASH AT 96TH ST
225          RS       4    FLOW      -1
226          RC    .045     .04    .045    3250   .0061
227          RX       0     250     500     503     505     508     758    1008
228          RY       3     2.5       2       0       0       2     2.5       3
             * DDM   ***** Updated *****
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229          KK     62A
230          KM   BASIN 62A
231          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
232          KM    L=        .8  Lca=        .5   S=   30.0  Kn= .092  LAG=  46.9
233          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
234          BA     .38
235          LG     .46      .25     4.50      .55     8.00
236          UI     27.      27.      82.     117.     143.     165.     195.     239.     329.     310.
237          UI    250.     215.     180.     152.     128.      91.      56.      46.      41.      27.
238          UI     26.       8.       8.       8.       8.       8.       8.       8.       0.       0.
239          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             * DDM   ***** Preserved *****

240          KK   62ATD
241          KM   ROUTE 62A TO 62D VIA WASH CROSSING DIAGONALLY SOUTH OF BASELINE TO HAWES
242          RS       7    FLOW      -1
243          RC    .045      .04     .045    6500   .0061
244          RX       0      250      500     503     505     508     758    1008
245          RY       3     2.75      2.5       0       0     2.5    2.75     3.0
             * DDM   ***** Updated *****

246          KK     62B
247          KM   BASIN 62B
248          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
249          KM    L=        .6  Lca=        .3   S=   47.5  Kn= .086  LAG=  32.7
250          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
251          BA     .23
252          LG     .38      .30     4.65      .38     8.00
253          UI     24.      52.     107.     138.     173.     243.     289.     215.     171.     133.
254          UI     97.      52.      40.      26.      18.       7.       7.       7.       7.       0.
255          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
256          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             * DDM   ***** Preserved *****

257          KK   62BTD
258          KM   ROUTE 62B TO 62D VIA HAWES ROAD
259          RS       6    FLOW      -1
260          RC    .045      .04     .045    5280   .0041
261          RX       0       50       75      77     127     129     154     204
262          RY       2     1.75     1.50       0       0     1.5    1.75       2
             *
             * DDM   ***** Updated *****
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                                   HEC-1 INPUT

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

263          KK     62D
264          KM   BASIN 62D
265          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
266          KM    L=        .9  Lca=        .3   S=   30.7  Kn= .092  LAG=  43.6
267          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
268          BA     .46
269          LG     .42      .29     4.65      .40     1.00
270          UI     36.      36.     124.     165.     200.     234.     281.     381.     445.     349.
271          UI    293.     245.     203.     168.     118.      69.      60.      47.      36.      23.
272          UI     11.      11.      11.      11.      11.      11.       0.       0.       0.       0.
273          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

274          KK   CP62D
275          KM   COMBINE FLOWS FROM SUBBASINS 62A, 62B, AND 62D
276          HC       3
             *
             * DDM   ***** Preserved *****

277          KK   62DTF
278          KM   ROUTE 62D TO 62F VIA HAWES ROAD
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279          RS       4    FLOW      -1
280          RC    .045    .024    .045    3600    .0033
281          RX       0     500     750     753     793     796    1046    1546
282          RY       3     1.5    1.25       0       0    1.25     1.5       3
             *
             * DDM   ***** Updated *****

283          KK     62C
284          KM   BASIN 62C
285          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
286          KM    L=        .6  Lca=        .3   S=   24.2  Kn= .080  LAG=  32.3
287          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
288          BA     .55
289          LG     .32     .32    4.65     .31    8.00
290          UI     57.    126.    255.    329.    415.    594.    669.    497.    394.    306.
291          UI    215.    114.     92.     57.     35.     17.     17.     17.     17.      0.
292          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
293          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

294          KK   62CTF
295          KM   ROUTE 62C TO 62F VIA NATURAL WASH
296          RS       5    FLOW      -1
297          RC    .045    .040    .045    4400    .0061
298          RX       0     450     500     503     505     558     758    1008
299          RY       4       3       2       0       0       2     2.5       4
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE  8

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


300          KK     62F
301          KM   BASIN 62F
302          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
303          KM    L=        .6  Lca=        .4   S=   31.9  Kn= .083  LAG=  35.7
304          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
305          BA     .26
306          LG     .34     .33    4.65     .29    2.00
307          UI     24.     44.    100.    130.    159.    202.    294.    257.    203.    163.
308          UI    130.     96.     53.     41.     29.     24.      7.      7.      7.      7.
309          UI      7.      0.      0.      0.      0.      0.      0.      0.      0.      0.
310          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

311          KK    CP62
312          KM   COMBINE FLOWS FROM SUBBASINS 62D, 62E AND 62F AND 62C
313          HC       4
             * DDM   ***** Preserved *****

314          KK   62T63
315          KM     ROUTE CP62 TO S63 viA WASH.
316          KM     WASH CROSSING HAWES, NORTH OF ELLIOT
317          RS       7    FLOW      -1
318          RC    .045     .04    .045    6000  0.0055
319          RX       0     500     750     770     780     800    1050    1550
320          RY       5       4       3       0       0       3       4       5
             * DDM   ***** Updated *****

321          KK      63
322          KM   BASIN 63
323          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
324          KM    L=       2.0  Lca=       1.5   S=   20.0  Kn= .088  LAG= 108.0
325          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
326          BA     .91
327          LG     .37     .32    4.65     .32    2.00
328          UI     28.     28.     28.     28.     30.     93.    101.    114.    132.    141.
329          UI    153.    162.    172.    183.    200.    214.    229.    258.    303.    339.
330          UI    379.    341.    304.    277.    256.    240.    227.    211.    195.    179.
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 331          UI    168.    155.    143.    134.    119.    103.     82.     66.     50.     50.
 332          UI     48.     47.     47.     34.     28.     28.     28.     28.     15.      9.
 333          UI      9.      9.      9.      9.      9.      9.      9.      9.      9.      9.
 334          UI      9.      9.      9.      9.      0.      0.      0.      0.      0.      0.
 335          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 336          KK    CP63
 337          KM     COMBINE S63 AND CP62
 338          HC       2
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  9

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


 339          KK   63T71
 340          KM     ROUTE CP63 TO S71 VIA SHEET FLOW
 341          KM     SOSSAMAN SOUTH OF ELLIOT
 342          RS       6    FLOW      -1
 343          RC    .055    .045    .055    5280  0.0005
 344          RX       0    1000    1005    1010    1013    1043    1543    2043
 345          RY       6       5       0       0       3       5       2       5
              *
              * DDM   ***** Preserved *****

 346          KK  ADOT-E
 347          KM   INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY ENTERING 67A
 348          KM   FROM EAST ADOT DETENTION BASIN 4105.
              * KO     1
 349          BA    0.01
 350          ZR  =QI A=ADOT EAST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              * DDM   ***** Preserved *****

 351          KK  AET67A
 352          KM    ROUTE SUPERSTITION FLOW THROUGH 67A TO BASELINE ROAD
 353          IN      15
 354          RS       6    FLOW      -1
 355          RC    .045    .040    .045    5500    .010
 356          RX       0     100     110     120     130     140     150     250
 357          RY       5       4       3       1       1       3       4       5
              *
              * DDM   ***** Updated *****

 358          KK     67A
 359          KM   BASIN 67A
 360          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 361          KM    L=      1.0  Lca=       .7   S=   42.9  Kn= .082  LAG=  50.1
 362          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 363          BA     .30
 364          LG     .32     .34    4.70     .28    9.00
 365          UI     20.     20.     52.     82.    101.    116.    135.    158.    208.    253.
 366          UI    211.    177.    154.    130.    111.     95.     69.     44.     35.     33.
 367          UI     21.     20.     12.      6.      6.      6.      6.      6.      6.      0.
 368          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 369          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 370          KK    C67A
 371          KM    COMBINE FLOWS FROM SUP3 AND SUBBASIN 67A
 372          HC       2
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 10

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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373          KK   67ATC
374          KM   ROUTE 67A TO 67C VIA WASH CROSSING BASELINE
375          RS       7    FLOW      -1
376          RC    .055    .045    .055    6300   .0071
377          RX       0     500     980    1003    1007    1031    1511    2011
378          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Preserved *****

379          KK    SUP2
380          KM   INFLOW FROM NORTH OF SUPERSTITION FREEWAY, DISCHARGING INTO 67B
             * KO      1
381          BA    0.01
382          ZR  =QI A=ADOT WEST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
             *
             * DDM   ***** Preserved *****

383          KK   RSUP2
384          KM   ROUTE SUP2 THROUGH SUBBASIN 67B
385          IN      15
386          RS       5    FLOW      -1
387          RC    .045    .045    .045    4500   .0056
388          RX       0     500    1000    1003    1007    1011    1511    2011
389          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

390          KK     67B
391          KM   BASIN 67B
392          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
393          KM    L=      1.2  Lca=       .9   S=   28.0  Kn= .083  LAG=  64.5
394          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
395          BA     .53
396          LG     .32     .34    4.90     .26    8.00
397          UI     28.     28.     30.     93.    114.    135.    153.    169.    191.    214.
398          UI    257.    325.    356.    295.    255.    228.    204.    178.    158.    139.
399          UI    119.     89.     61.     49.     46.     43.     28.     28.     25.      9.
400          UI      9.      9.      9.      9.      9.      9.      9.      9.      0.      0.
401          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

402          KK    C67B
403          KM   COMBINE FLOWS FROM SUP2 AND SUBBASIN 67B
404          HC       2
             * DDM   ***** Preserved *****

405          KK   67BTC
406          KM   ROUTE SUBBASIN 67B TO 67C ALONG CRISMON ROAD
407          KM   DIRT CHANNEL WITH MUCH VEGETATION, LEFT BANK DESERT, RIGHT BANK IS AG FIELD
408          RS       9    FLOW      -1
409          RC    .045    .055    .065    5280   .0046
410          RX       0     500    1000    1003    1018    1021    1556    2056
411          RY       8       7       6       1       1       6       7       8
             *
             * DDM   ***** Updated *****
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                                        HEC-1 INPUT

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


412          KK     67C
413          KM   BASIN 67C
414          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
415          KM    L=      1.2  Lca=       .7   S=   40.2  Kn= .090  LAG=  59.3
416          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
417          BA     .93
418          LG     .35     .36    5.10     .22     .00
419          UI     53.     53.     85.    185.    233.    272.    305.    345.    395.    467.
```

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420          UI    604.    670.    549.    473.    421.    368.    320.    278.    244.    183.
421          UI    127.     93.     87.     79.     53.     53.     35.     16.     16.     16.
422          UI     16.     16.     16.     16.     16.      0.      0.      0.      0.      0.
423          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

424          KK    C67C
425          KM   COMBINE SUBBASINS 67C AND 67A AND 67B
426          HC       3
             *
             * DDM   ***** Preserved *****

427          KK   67CTE
428          KM   ROUTE 67C TO 67E, (THIS FLOW IS ROUTED DIFFERENTLY THAN 67D)
429          RS       7    FLOW      -1
430          RC    .045    .045    .045    6500   .0061
431          RX       0     500    1000    1003    1007    1011    1511    2011
432          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

433          KK     67D
434          KM   BASIN 67D
435          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
436          KM    L=        .6  Lca=        .4   S=   34.7  Kn= .090  LAG=  36.9
437          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
438          BA     .13
439          LG     .35     .37    5.20     .21     .00
440          UI     11.     19.     45.     60.     73.     90.    130.    131.    101.     83.
441          UI     66.     52.     33.     20.     17.     11.      7.      3.      3.      3.
442          UI      3.      3.      0.      0.      0.      0.      0.      0.      0.      0.
443          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

444          KK   67DTE
445          KM   ROUTE CONCENTRATION POINT 67D TO SUBBASIN 67E VIA WASH
446          RS       7    FLOW      -1
447          RC    .045    .045    .045    6000   .0053
448          RX       0     500    1000    1003    1007    1011    1511    2011
449          RY       5     4.5       3       0       0       3     4.5       5
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 12

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


450          KK     67E
451          KM   BASIN 67E
452          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
453          KM    L=       1.2  Lca=        .7   S=   32.3  Kn= .090  LAG=  63.6
454          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
455          BA     .58
456          LG     .35     .38    5.40     .19     .00
457          UI     31.     31.     36.    105.    128.    152.    171.    190.    215.    243.
458          UI    294.    377.    384.    317.    277.    249.    220.    193.    170.    149.
459          UI    125.     91.     57.     54.     51.     41.     31.     31.     19.      9.
460          UI      9.      9.      9.      9.      9.      9.      9.      0.      0.      0.
461          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

462          KK   CP67E
463          KM   COMBINE SUBBASINS 67E AND 67D, AND 67C
464          HC       3
             *
             * DDM   ***** Preserved *****
```

```
465          KK   67T68
466          KM    ROUTE S67 TO S68 VIA WASH
467          RS       3    FLOW      -1
468          RC    .045     .04    .045    2500   .0068
469          RX       0     500     950    1003    1007    1057    1511    2011
470          RY       4     3.5       3       0       0       2     2.5       3
             * DDM   ***** Updated *****

471          KK     68A
472          KM   BASIN 68A
473          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
474          KM    L=       .7  Lca=       .4   S=   37.7  Kn= .087  LAG=  37.2
475          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
476          BA     .35
477          LG     .34     .38    5.70     .18    3.00
478          UI     32.     52.    125.    165.    199.    247.    352.    369.    283.    233.
479          UI    186.    149.     98.     55.     50.     32.     24.     10.     10.     10.
480          UI     10.     10.      0.      0.      0.      0.      0.      0.      0.      0.
481          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

482          KK    C68A
483          KM   COMINE FLOWS FROM 67 AND 68A
484          HC       2
             *
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

485          KK   68ATB
486          KM   ROUTE S68A TO S68B VIA WASH
487          RS       3    FLOW      -1
488          RC    .045     .04    .045    2500    .006
489          RX       0     500     950    1003    1007    1057    1511    2011
490          RY       4     305       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

491          KK     68B
492          KM   BASIN 68B
493          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
494          KM    L=       .6  Lca=       .3   S=   32.3  Kn= .090  LAG=  34.4
495          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
496          BA     .25
497          LG     .35     .37    5.20     .21     .00
498          UI     24.     47.    102.    132.    164.    214.    299.    235.    188.    149.
499          UI    117.     76.     42.     36.     24.     14.      7.      7.      7.      7.
500          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
501          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

502          KK   CP68B
503          KM   COMBINE S68A AND S68B
504          HC       2
             *
             * DDM   ***** Preserved *****

505          KK  68BT69
506          KM   ROUTE S68B TO S69 VIA WASH CROSSING HAWES
507          RS       3    FLOW      -1
508          RC    .045     .04    .045    2750   .0036
509          RX       0     500     950    1003    1007    1057    1511    2011
510          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****
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```
511          KK      69
512          KM   BASIN 69
513          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
514          KM    L=        .7  Lca=        .3   S=   22.4  Kn= .094  LAG=  42.3
515          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
516          BA     .09
517          LG     .41      .31     4.70      .35      .00
518          UI      7.       8.      26.      35.      41.      49.      60.      84.      85.      67.
519          UI     57.      46.      38.      31.      18.      13.      12.       7.       7.       2.
520          UI      2.       2.       2.       2.       2.       0.       0.       0.       0.       0.
521          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


522          KK     C69
523          KM   COMBINE FLOWS FROM C68B AND 69
524          HC       2
             *
             * DDM   ***** Preserved *****

525          KK   69T71
526          KM     ROUTE S69 TO S71 VIA WASH AND SHEET FLOW, INCREASE OVERBANK N VALUES
527          RS       7    FLOW      -1
528          RC    .055    .045    .055    6000   .0033
529          RX       0     500    1000    1001    1002    1500    2000    2500
530          RY       4       3       2       0       0       2       3       4
             *
             * DDM   ***** Updated *****

531          KK      71
532          KM   BASIN 71
533          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
534          KM    L=      2.4  Lca=       .9   S=   25.4  Kn= .093  LAG=  97.2
535          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
536          BA    1.09
537          LG     .39      .32     4.70      .32      .00
538          UI     38.      38.      38.      38.      83.     127.     144.     174.     186.     204.
539          UI    216.     231.     252.     275.     294.     330.     387.     453.     500.     441.
540          UI    392.     357.     329.     307.     287.     261.     239.     222.     202.     186.
541          UI    174.     145.     115.      98.      67.      67.      63.      62.      62.      38.
542          UI     38.      38.      38.      24.      12.      12.      12.      12.      12.      12.
543          UI     12.      12.      12.      12.      12.      12.      12.      12.       0.       0.
544          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

545          KK    CP71
546          KM   COMBINE S71 WITH S69 AND S68B
547          HC       3
             *
             * DDM   ***** Preserved *****

548          KK   71T72
549          KM    ROUTE CP71 TO S72 VIA DIKE
550          KM     WASH WEST OF INTERSECTION OF SOSSAMAN & WARNER
551          RS       4    FLOW      -1
552          RC    .055    .045    .055    3750   .0037
553          RX       0     500    1000    1007    1017    1025    1530    2030
554          RY       9     8.5       8       0       0       8     8.5       9
             *
             * DDM   ***** Preserved *****

555          KK  EMFWAR
556          KM   COMBINE ROUTED FLOW FROM 71 WITH EMF
557          HC       2
             * DDM   ***** Preserved *****
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HEC-1 INPUT

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

 558          KK  WARTKN
 559          KM   ROUTE EMF WARNER ROAD FLOW TO KNOX ROAD
 560          RS       1    FLOW      -1
 561          RC     .03    .022     .03    2500   .0003
 562          RX       0     500     520     553     693     726     740     742
 563          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Preserved *****

 564          KK   CAP1A
 565          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
 566          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
 567          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
 568          IN      60
 569          BA     .01
 570          QI       0      65     217     217     217     217     217     217     217     217
 571          QI     217     217     217     217     217     217     217     217     217     217
 572          QI     217     217     217     217     217
              *
              * DDM   ***** Preserved *****

 573          KK   RCA1A
 574          KM   ROUTE FLOW FROM CAP OVERCHUTE CAP1A TO C65A AT GUADALUPE RD ALIGNMENT AND
 575          KM   MOUNTAIN RD ALIGNMENT (1/2 MILE EAST OF SIGNAL BUTTE RD).
 576          RS       5    FLOW      -1
 577          RC    .045     .04    .045    8000    .004
 578          RX       0     500    1000    1006    1026    1032    1511    2011
 579          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Preserved *****

 580          KK   CAP1B
 581          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
 582          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
 583          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
 584          IN      60
 585          BA     .01
 586          QI       0      65     217     217     217     217     217     217     217     217
 587          QI     217     217     217     217     217     217     217     217     217     217
 588          QI     217     217     217     217     217
              *
              * DDM   ***** Preserved *****

 589          KK  RCAP1B
 590          KM   ROUTE FLOW FROM CAP OVERCHUTE CAP1B TO C65A AT GUADALUPE RD ALIGNMENT AND
 591          KM   MOUNTAIN RD ALIGNMENT (1/2 MILE EAST OF SIGNAL BUTTE RD).
 592          RS       6    FLOW      -1
 593          RC    .045     .04    .045    8500    .004
 594          RX       0     500    1000    1006    1026    1032    1511    2011
 595          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****
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HEC-1 INPUT

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

 596          KK    65AW
 597          KM   BASIN 65AW
 598          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 599          KM    L=        .9  Lca=        .6   S=   54.7  Kn= .090  LAG=  26.1
 600          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 601          BA     .43
 602          LG     .35     .37    5.30     .23     .00
```

```
603          UI     56.    176.    295.    391.    603.    594.    432.    316.    210.    101.
604          UI     73.     43.     17.     17.     17.      0.      0.      0.      0.      0.
605          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

606          KK   C65AW
607          KM   COMBINE FLOWS FROM CAP OVERCHUTES 1A AND 1B (131+90 & 150+00) AND 65A
608          HC       3
             *
             * DDM   ***** Preserved *****

609          KK  65AWTB
610          KM   ROUTE 65A TO 65B VIA SIPHON DRAW
611          RS       8    FLOW      -1
612          RC    .045     .04    .045   11500   .0003
613          RX       0     500    1000    1003    1053    1056    1511    2011
614          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

615          KK     65A
616          KM   BASIN 65A
617          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
618          KM    L=      1.6  Lca=       .9   S=   51.2  Kn= .089  LAG=  69.7
619          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
620          BA    2.54
621          LG     .35     .36    5.10     .26    1.00
622          UI    122.    122.    122.    345.    457.    572.    635.    703.    775.    875.
623          UI    972.   1166.   1460.   1573.   1316.   1148.   1032.    937.    826.    739.
624          UI    654.    583.    493.    362.    244.    217.    201.    198.    122.    122.
625          UI    122.     52.     38.     38.     38.     38.     38.     38.     38.     38.
626          UI     38.      0.      0.      0.      0.      0.      0.      0.      0.      0.
627          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

628          KK   65ATB
629          KM   ROUTE FLOW FROM MERIDIAN RD TO CRISMON ROAD ALIGNMENT ALONG ELLIOT RD.
630          RS       7    FLOW      -1
631          RC     .05    .045    .045   10500    .005
632          RX       0      20      25      30      38      43     100     200
633          RY      12       8       8       0       0       5       6       7
             *
             * DDM   ***** Updated *****
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                                          HEC-1 INPUT

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


634          KK     65B
635          KM   BASIN 65B
636          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
637          KM    L=      2.0  Lca=      1.2   S=   37.5  Kn= .090  LAG=  91.5
638          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
639          BA    1.37
640          LG     .35     .40    6.00     .15     .00
641          UI     51.     51.     51.     51.    142.    180.    210.    240.    262.    283.
642          UI    304.    328.    363.    391.    436.    515.    611.    668.    581.    515.
643          UI    467.    431.    402.    370.    333.    308.    281.    255.    237.    202.
644          UI    160.    132.     89.     89.     84.     83.     74.     51.     51.     51.
645          UI     48.     16.     16.     16.     16.     16.     16.     16.     16.     16.
646          UI     16.     16.     16.     16.      0.      0.      0.      0.      0.      0.
647          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

648          KK   CP65B
649          KM   COMBINE S65A WITH 65B
650          HC       3
```

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                 *
                 * DDM   ***** Preserved *****

651              KK   65T66
652              KM   ROUTE 65B TO 66D VIA GM PERIMETER CHANNEL
653              RS       3    FLOW      -1
654              RC    0.05   0.045   0.045    4500   0.005
655              RX       0      20      25      30      38      43     100     200
656              RY      12       8       8       0       0       5       6       7
                 *
                 * DDM   ***** Updated *****

657              KK     66A
658              KM   BASIN 66A
659              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
660              KM    L=        .7  Lca=        .3   S=   55.9  Kn= .086  LAG=  31.2
661              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
662              BA     .26
663              LG     .35     .38    6.00     .17    5.00
664              UI     29.     68.    132.    170.    217.    326.    310.    236.    183.    141.
665              UI     86.     49.     38.     28.      9.      9.      9.      9.      0.      0.
666              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

667              KK   66ATB
668              KM   ROUTE S66A TO 66B VIA WASH CROSSING BASELINE
669              RS       7    FLOW      -1
670              RC    .045     .04    .045    7500   .0077
671              RX       0     500     980    1003    1007    1031    1511    2011
672              RY       4     3.5       3       0       0       3     3.5       4
                 *
                 * DDM   ***** Updated *****
1                                                HEC-1 INPUT
PAGE 18

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

673              KK     66B
674              KM   BASIN 66B
675              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
676              KM    L=       1.6  Lca=       1.0   S=   43.3  Kn= .090  LAG=  77.0
677              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
678              BA     .67
679              LG     .35     .36    5.00     .23     .00
680              UI     29.     29.     29.     60.    102.    122.    140.    158.    170.    187.
681              UI    209.    229.    268.    327.    383.    340.    294.    263.    240.    220.
682              UI    195.    177.    159.    142.    125.     98.     75.     52.     51.     48.
683              UI     46.     29.     29.     29.     18.      9.      9.      9.      9.      9.
684              UI      9.      9.      9.      9.      9.      0.      0.      0.      0.      0.
685              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 * DDM   ***** Preserved *****

686              KK   CP66B
687              KM   COMBINE S66A AND S66B
688              HC       2
                 * DDM   ***** Preserved *****

689              KK   66BTC
690              KM   ROUTE 66B TO 66C VIA WASH
691              RS       6    FLOW      -1
692              RC    .045     .04    .045    6000   .0073
693              RX       0     500     995    1003    1007    1016    1511    2011
694              RY       4     3.5       3       0       0       3     3.5       4
                 *
                 * DDM   ***** Updated *****

695              KK     66C
696              KM   BASIN 66C
697              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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698          KM    L=      1.1  Lca=       .7   S=   39.5  Kn= .090  LAG=  57.8
699          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
700          BA     .50
701          LG     .35     .38    5.40     .19     .00
702          UI     29.     29.     52.    104.    132.    153.    172.    196.    224.    275.
703          UI    359.    350.    288.    251.    223.    192.    168.    144.    121.     88.
704          UI     54.     50.     48.     33.     29.     26.      9.      9.      9.      9.
705          UI      9.      9.      9.      9.      0.      0.      0.      0.      0.      0.
706          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

707          KK   CP66C
708          KM   COMBINE S66C AND S66B
709          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 19

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


710          KK   66CTD
711          KM   ROUTE 66C TO 66D VIA WASH
712          RS       6    FLOW      -1
713          RC    .045     .04    .045    5500   .0055
714          RX       0     500     970    1003    1007    1031    1511    2011
715          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Updated *****

716          KK     66D
717          KM   BASIN 66D
718          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
719          KM    L=      1.0  Lca=       .7   S=   28.6  Kn= .090  LAG=  59.4
720          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
721          BA     .31
722          LG     .35     .36    6.80     .11     .00
723          UI     18.     18.     28.     62.     78.     91.    102.    115.    132.    155.
724          UI    200.    224.    184.    158.    141.    123.    107.     93.     82.     62.
725          UI     43.     31.     29.     27.     18.     18.     12.      5.      5.      5.
726          UI      5.      5.      5.      5.      5.      0.      0.      0.      0.      0.
727          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

728          KK    C66D
729          KM   COMBINE 66D AND 66C
730          HC       2
             *
             * DDM   ***** Preserved *****

731          KK    CP66
732          KM   COMBINE FLOWS FROM C66D AND C65
733          HC       2
             *
             * DDM   ***** Preserved *****

734          KK  66DT70
735          KM   ROUTE 66D TO 70A VIA GM CHANNEL. WASH N AND W OF GMPG INCLUDING CHANNEL
736          KM   FLOWS CROSSING ELLSWORTH SOUTH OF ELLIOT
737          RS       4    FLOW      -1
738          RC    .055    .045    .055    3500   .0054
739          RX       0     100     950    1050    1060    1163    1663    2000
740          RY       5       4       3       0       0       3       4       5
             *
             * DDM   ***** Updated *****

741          KK     70A
742          KM   BASIN 70A
743          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
744          KM    L=       .8  Lca=       .6   S=   26.3  Kn= .089  LAG=  50.1
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745          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
746          BA     .54
747          LG     .35     .36    6.80     .11     .00
748          UI     36.     36.     94.    149.    183.    211.    244.    286.    377.    459.
749          UI    383.    321.    280.    236.    202.    172.    124.     80.     63.     59.
1                                          HEC-1 INPUT
PAGE 20

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

750          UI     38.     36.     21.     11.     11.     11.     11.     11.     11.      0.
751          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
752          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

753          KK    C70A
754          KM   COMBINE FLOWS FROM C66 AND 70A
755          HC       2
             *
             * DDM   ***** Preserved *****

756          KK   70ATB
757          KM   ROUTE 70A TO 70B VIA WARNER ROAD
758          RS       7    FLOW      -1
759          RC    .045    .035    .045    6000   .0046
760          RX       0     100     950    1050    1060    1163    1663    2000
761          RY       5       4       3       0       0       3       4       5
             *
             * DDM   ***** Updated *****

762          KK     70B
763          KM   BASIN 70B
764          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
765          KM    L=      1.0  Lca=       .7   S=   23.8  Kn= .090  LAG=  63.2
766          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
767          BA     .38
768          LG     .37     .27    8.00     .08    1.00
769          UI     20.     20.     24.     68.     84.     99.    112.    124.    141.    159.
770          UI    194.    250.    246.    204.    178.    160.    141.    124.    109.     96.
771          UI     78.     56.     36.     34.     33.     25.     20.     20.     10.      6.
772          UI      6.      6.      6.      6.      6.      6.      6.      0.      0.      0.
773          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

774          KK   CP70B
775          KM   COMBINE S70A WITH S70B
776          HC       2
             * DDM   ***** Preserved *****

777          KK  70BT76
778          KM   ROUTE 70B TO 76B VIA WASH CROSSING SOSSAMAN, SOUTH OF WARNER ROAD
779          RS       6    FLOW      -1
780          RC    .045     .04    .045    5500   .0041
781          RX       0     500    1000    1003    1007    1011    1511    2011
782          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

783          KK     76B
784          KM   BASIN 76B
785          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
786          KM    L=      1.8  Lca=       .9   S=   27.4  Kn= .091  LAG=  82.1
787          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
788          BA     .64
1                                          HEC-1 INPUT
PAGE 21

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

789          LG     .36     .26    8.80     .05     .00
```

```
790          UI     26.     26.     26.     40.     87.    102.    122.    134.    146.    158.
791          UI    174.    193.    210.    247.    299.    345.    306.    266.    240.    219.
792          UI    203.    182.    164.    151.    133.    123.    104.     80.     61.     46.
793          UI     45.     43.     42.     26.     26.     26.     21.      8.      8.      8.
794          UI      8.      8.      8.      8.      8.      8.      8.      8.      8.      0.
795          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
796          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

797          KK   CP76B
798          KM   COMBINE FLOW FROM C76B AND EMFKNX
799          HC       2
             *
             * DDM   ***** Updated *****

800          KK      72
801          KM   BASIN 72
802          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
803          KM    L=      1.8  Lca=        .6   S=   13.1  Kn= .089  LAG=  79.1
804          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
805          BA     .84
806          LG     .35     .37    5.30     .20    1.00
807          UI     36.     36.     36.     66.    123.    146.    170.    189.    206.    224.
808          UI    248.    274.    308.    383.    445.    449.    383.    340.    308.    284.
809          UI    256.    230.    211.    184.    170.    144.    110.     82.     63.     61.
810          UI     59.     53.     36.     36.     36.     20.     11.     11.     11.     11.
811          UI     11.     11.     11.     11.     11.     11.     11.      0.      0.      0.
812          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

813          KK    KNOX
814          KM   COMBINE FLOWS AT KNOX ROAD BEFORE ENTERING INTO THE EMF
815          HC       2
             *
             * DDM   ***** Preserved *****

816          KK  EMFKNX
817          KM   COMBINE FLOWS INTO THE EMF AT KNOX ROAD
818          HC       2
             *
             * DDM   ***** Preserved *****

819          KK  KNXTRY
820          KM   ROUTE EMF KNOX ROAD FLOW TO RAY ROAD
821          RS       1    FLOW      -1
822          RC     .03    .022     .03    3000   .0003
823          RX       0     500     520     553     693     726     740     742
824          RY      14      12      11       0       0      11      11      12
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

825          KK     76A
826          KM   BASIN 76A
827          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
828          KM    L=      3.0  Lca=      1.8   S=   23.0  Kn= .090  LAG= 135.0
829          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
830          BA    1.91
831          LG     .35     .27    8.80     .05     .00
832          UI     48.     48.     48.     48.     48.     48.    134.    157.    180.    193.
833          UI    219.    232.    248.    261.    273.    287.    302.    321.    343.    362.
834          UI    379.    418.    466.    549.    560.    643.    593.    537.    495.    463.
835          UI    433.    412.    391.    374.    353.    329.    309.    292.    277.    257.
836          UI    241.    230.    219.    186.    170.    137.    130.     84.     84.     84.
837          UI     81.     78.     78.     78.     53.     48.     48.     48.     48.     48.
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838          UI     27.     15.     15.     15.     15.     15.     15.     15.     15.     15.
839          UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
840          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
841          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

842          KK  EMFRAY
843          KM   COMBINE FLOWS IN THE EMF AT RAY ROAD
844          KM   EMF UPSTREAM OF POWERLINE
845          HC       2
             *
             * DDM   ***** Updated *****

846          KK     73A
847          KM   BASIN 73A
848          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
849          KM    L=      2.3  Lca=      1.0   S=   34.9  Kn= .093  LAG=  94.5
850          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
851          BA     .95
852          LG     .35     .36    5.00     .27     .00
853          UI     34.     34.     34.     34.     84.    117.    134.    158.    171.    185.
854          UI    197.    214.    232.    254.    274.    317.    381.    429.    424.    369.
855          UI    332.    303.    282.    263.    240.    220.    202.    185.    169.    157.
856          UI    134.    107.     90.     60.     60.     57.     55.     54.     34.     34.
857          UI     34.     34.     16.     10.     10.     10.     10.     10.     10.     10.
858          UI     10.     10.     10.     10.     10.     10.      0.      0.      0.      0.
859          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

860          KK   73ATB
861          KM   ROUTE 73A TO 73B VIA WASH RUNNING DIAGONALLY ACROSS 73B
862          RS       3    FLOW      -1
863          RC     .06     .05     .06    2700   .0074
864          RX       0     500    1000    1003    1007    1011    1511    2011
865          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****
```



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                                   HEC-1 INPUT

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

866          KK     73B
867          KM   BASIN 73B
868          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
869          KM    L=       .6  Lca=       .4   S=   26.3  Kn= .090  LAG=  38.9
870          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
871          BA     .42
872          LG     .35     .37    5.30     .20     .00
873          UI     36.     54.    139.    185.    221.    270.    365.    452.    355.    292.
874          UI    238.    193.    148.     85.     62.     51.     36.     21.     11.     11.
875          UI     11.     11.     11.      0.      0.      0.      0.      0.      0.      0.
876          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

877          KK   CP73B
878          KM   COMBINE S73A AND S73B
879          HC       2
             *
             * DDM   ***** Preserved *****

880          KK   73BTC
881          KM   ROUTE 73B TO 73C VIA WASH CROSSING MOUNTAIN ROAD
882          KM    THEN ROUTED SOUTH ALONG GENERAL MOTORS BERM TO SW CORNING OF 73C
883          RS       6    FLOW      -1
884          RC    .035    .022    .035    5000   .0036
885          RX       0     500    1000    1003    1007    1011    1511    2011
```

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886          RY       5     4.5       3       0       0       3     4.5       5
             *
             * DDM   ***** Updated *****

887          KK     73C
888          KM   BASIN 73C
889          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
890          KM    L=        .6  Lca=        .3   S=   43.7  Kn= .090  LAG=  31.5
891          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
892          BA     .58
893          LG     .35     .37    5.30     .20     .00
894          UI     62.    144.    283.    365.    465.    690.    689.    520.    405.    313.
895          UI    202.    108.     87.     62.     23.     19.     19.     19.      0.      0.
896          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

897          KK   CP73C
898          KM   COMBINE 73C AND 73B
899          HC       2
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 24

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


900          KK  73T74C
901          KM   ROUTE 73C TO 74C VIA GM BERM, WEST EDGE OF 74C
902          RS       4    FLOW      -1
903          RC    .035    .022    .035    3500   .0034
904          RX       0     500    1000    1001    1016    1516    2016    2516
905          RY       6     5.5       5       2       2     3.5     4.5     5.5
             *
             * DDM   ***** Updated *****

906          KK     74A
907          KM   BASIN 74A
908          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
909          KM    L=       2.4  Lca=      1.0   S=   42.2  Kn= .095  LAG=  92.9
910          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
911          BA     .75
912          LG     .35     .36    5.00     .27     .00
913          UI     27.     27.     27.     27.     73.     96.    111.    129.    140.    151.
914          UI    163.    175.    193.    208.    228.    268.    317.    362.    327.    287.
915          UI    260.    239.    222.    206.    187.    171.    160.    142.    132.    118.
916          UI     99.     79.     56.     48.     47.     45.     45.     32.     27.     27.
917          UI     27.     19.      8.      8.      8.      8.      8.      8.      8.      8.
918          UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
919          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

920          KK   74ATB
921          KM   ROUTE 74A TO 74B VIA WASH CROSSING COUNTY LINE
922          RS       4    FLOW      -1
923          RC    .045     .04    .045    3500   .0054
924          RX       0     500    1000    1003    1007    1011    1511    2011
925          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

926          KK     74B
927          KM   BASIN 74B
928          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
929          KM    L=        .6  Lca=        .5   S=   32.1  Kn= .090  LAG=  42.0
930          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
931          BA     .33
932          LG     .35     .40    6.00     .15     .00
933          UI     26.     30.     94.    127.    151.    180.    221.    311.    305.    241.
```

```
934          UI    203.    166.    137.    107.     64.     46.     41.     26.     22.      8.
935          UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
936          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 25

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

937          KK   CP74B
938          KM   COMBINE S74A AND S74B
939          HC       2
             *
             * DDM   ***** Preserved *****

940          KK   74BTC
941          KM   ROUTE 74B TO 74C VIA WASH CROSSING MOUNTAIN ROAD
942          RS       4    FLOW      -1
943          RC    .045     .04    .045    3500   .0051
944          RX       0     500     980    1003    1007    1031    1511    2011
945          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Updated *****

946          KK     74C
947          KM   BASIN 74C
948          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
949          KM    L=       .7  Lca=       .5   S=   25.4  Kn= .090  LAG=  46.2
950          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
951          BA     .34
952          LG     .35     .35    7.00     .10     .00
953          UI     25.     25.     79.    111.    134.    156.    186.    231.    315.    279.
954          UI    227.    195.    163.    137.    113.     80.     46.     42.     34.     25.
955          UI     19.      8.      8.      8.      8.      8.      8.      0.      0.      0.
956          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

957          KK   CP74C
958          KM   COMBINE 74C AND 74B AND 73C
959          HC       3
             *
             * DDM   ***** Preserved *****

960          KK  74CT75
961          KM    ROUTE CP74C TO S75 VIA POWERLINE FLOODWAY. Vel of 10 ft/sec for NSTP calc.
962          RS       3    FLOW      -1
963          RC     .03    .013     .03   10560   .0049
964          RX       0    1005    1023  1030.5  1036.5    1044    1062    2067
965          RY       6       5       5       0       0       5       5       6
             *
             * DDM   ***** Updated *****

966          KK      75
967          KM   BASIN 75
968          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
969          KM    L=      4.0  Lca=      3.0   S=   20.0  Kn= .087  LAG= 182.0
970          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
971          BA    4.01
972          LG     .34     .35    6.80     .13    3.00
973          UI     74.     74.     74.     74.     74.     74.     74.     74.    180.    243.
974          UI    247.    284.    284.    335.    342.    363.    375.    396.    412.    422.
975          UI    437.    458.    475.    495.    519.    550.    567.    585.    622.    672.
1                                          HEC-1 INPUT
PAGE 26

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

976          UI    737.    819.    865.    935.   1002.    935.    870.    813.    764.    726.
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977          UI    693.    664.    637.    614.    593.    574.    547.    519.    496.    473.
978          UI    452.    437.    425.    387.    377.    363.    347.    341.    289.    284.
979          UI    233.    213.    213.    147.    131.    131.    131.    130.    122.    122.
980          UI    122.    122.    122.     75.     74.     74.     74.     74.     74.     74.
981          UI     74.     43.     23.     23.     23.     23.     23.     23.     23.     23.
982          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
983          UI     23.     23.     23.     23.     23.     23.     23.     23.      0.      0.
984          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

985          KK    CP75
986          KM   COMBINE FLOWS FROM C74C AND SUBBASIN 75
987          HC       2
             *
             * DDM   ***** Preserved *****

988          KK   75TCP
989          KM   ROUTE 75 THROUGH POWERLINE FLOODWAY TO AIR FORCE CHANNEL
990          RS       2    FLOW      -1
991          RC     .03    .013     .03    6000   .0041
992          RX       0    1005    1023  1030.5  1036.5    1044    1062    2067
993          RY       6       5       5       0       0       5       5       6
             *
             * DDM   ***** Updated *****

994          KK     77A
995          KM   BASIN 77A
996          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
997          KM    L=      2.9  Lca=      1.5   S=   31.1  Kn= .092  LAG= 119.0
998          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
999          BA    1.74
1000         LG     .35     .36    5.00     .27     .00
1001         UI     49.     49.     49.     49.     49.    108.    162.    185.    205.    230.
1002         UI    244.    264.    278.    293.    311.    333.    358.    380.    406.    462.
1003         UI    537.    584.    659.    601.    541.    496.    461.    430.    407.    385.
1004         UI    362.    334.    311.    293.    273.    252.    238.    226.    189.    161.
1005         UI    141.    104.     87.     87.     83.     81.     81.     73.     49.     49.
1006         UI     49.     49.     49.     22.     15.     15.     15.     15.     15.     15.
1007         UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
1008         UI     15.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1009         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

1010         KK   77ATB
1011         KM   ROUTE 77A TO 77B VIA WASH CROSSING COUNTY LINE
1012         RS       3    FLOW      -1
1013         RC    .045     .04    .045    3000    .006
1014         RX       0     500     980    1003    1007    1031    1511    2011
1015         RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Updated *****
```



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                                        HEC-1 INPUT

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


1016         KK     77B
1017         KM   BASIN 77B
1018         KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1019         KM    L=       .6  Lca=       .3   S=   26.3  Kn= .079  LAG=  30.4
1020         KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1021         BA     .36
1022         LG     .34     .34    5.30     .22    4.00
1023         UI     39.     97.    186.    239.    311.    468.    404.    310.    238.    179.
1024         UI     97.     66.     44.     28.     12.     12.     12.     12.      0.      0.
1025         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
```

```
1026          KK   CP77B
1027          KM   COMBINE S77A AND S77B
1028          HC       2
              *
              * DDM   ***** Preserved *****

1029          KK   77BTC
1030          KM   ROUTE 77B TO 77C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
1031          KM    WESTERN EDGE OF 77C
1032          RS       5    FLOW      -1
1033          RC    .045     .04    .045    4750   .0042
1034          RX       0     500     950    1003    1007    1061    1511    2011
1035          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****

1036          KK     77C
1037          KM   BASIN 77C
1038          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1039          KM    L=        .5  Lca=        .3   S=   32.3  Kn= .090  LAG=  32.2
1040          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1041          BA     .28
1042          LG     .35     .39    5.80     .16     .00
1043          UI     29.     65.    132.    170.    215.    309.    343.    255.    202.    157.
1044          UI    109.     58.     47.     29.     17.      9.      9.      9.      9.      0.
1045          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1046          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1047          KK    C77C
1048          KM   COMBINE FLOWS FROM C77B AND SUBBASIN 77C
1049          HC       2
              *
              * DDM   ***** Preserved *****
```



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

1050          KK  77CT78
1051          RS       3    FLOW      -1
1052          RC   0.035   0.022   0.035    2400   0.002
1053          RX       0     100     110     115     120     125     130     135
1054          RY       4       3     2.5       0       0     2.5       8       9
              *
              * DDM   ***** Updated *****

1055          KK     78A
1056          KM   BASIN 78A
1057          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1058          KM    L=       3.7  Lca=       2.1   S=   28.5  Kn= .090  LAG= 149.0
1059          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1060          BA    2.29
1061          LG     .35     .36    5.00     .27     .00
1062          UI     52.     52.     52.     52.     52.     52.     69.    170.    172.    198.
1063          UI    209.    238.    250.    262.    278.    290.    303.    317.    333.    352.
1064          UI    374.    392.    407.    441.    491.    535.    616.    660.    688.    628.
1065          UI    578.    534.    504.    474.    451.    431.    414.    398.    371.    349.
1066          UI    331.    314.    300.    280.    265.    253.    239.    221.    198.    166.
1067          UI    149.    133.     92.     92.     92.     89.     85.     85.     85.     78.
1068          UI     52.     52.     52.     52.     52.     52.     39.     16.     16.     16.
1069          UI     16.     16.     16.     16.     16.     16.     16.     16.     16.     16.
1070          UI     16.     16.     16.     16.     16.     16.     16.     16.      0.      0.
1071          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1072          KK   78ATB
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```
1073          KM   ROUTE 78A TO 78B VIA WASH CROSSING COUNTY LINE
1074          RS       4    FLOW      -1
1075          RC    .045     .04    .045    3500   .0042
1076          RX       0     500     980    1003    1007    1031    1511    2011
1077          RY     4.5     3.5       3       0       0       3     3.5     4.5
              *
              * DDM   ***** Updated *****

1078          KK     78B
1079          KM   BASIN 78B
1080          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1081          KM    L=        .6  Lca=        .4   S=   31.6  Kn= .050  LAG=  20.9
1082          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1083          BA     .39
1084          LG     .30     .15    8.40     .09   15.00
1085          UI     68.    262.    393.    635.    638.    433.    283.    126.     78.     34.
1086          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
1087          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 29

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


1088          KK    C78B
1089          KM   COMBINE FLOWS FROM SUBBASIN 78A AND 78B
1090          HC       2
              *
              * DDM   ***** Preserved *****

1091          KK   78BTC
1092          KM   ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
1093          KM    WESTERN EDGE OF 78C.
1094          RS       3    FLOW      -1
1095          RC    .035    .022    .035    4500   .0033
1096          RX       0     100     110     115     120     125     130     135
1097          RY       5       4     3.5       0       0     3.5       8       9
              *
              * DDM   ***** Updated *****

1098          KK     78C
1099          KM   BASIN 78C
1100          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1101          KM    L=        .5  Lca=        .3   S=   31.7  Kn= .083  LAG=  28.7
1102          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1103          BA     .28
1104          LG     .34     .17   11.20     .02    3.00
1105          UI     33.     89.    162.    209.    284.    399.    299.    230.    173.    113.
1106          UI     57.     44.     29.     10.     10.     10.     10.      0.      0.      0.
1107          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1108          KK    C78C
1109          KM   COMBINE FLOWS FROM 78B AND 78C
1110          HC       2
              *
              * DDM   ***** Preserved *****

1111          KK   C78C2
1112          KM   COMBINE FLOWS FROM 77C AND 78C
1113          HC       2
              *
              * DDM   ***** Preserved *****

1114          KK  78CT79
1115          KM   ROUTE 78C TO 79B AT ELLSWORTH VIA GM CHANNEL
1116          RS       4    FLOW      -1
1117          RC    .035    .022    .035   10560   .0044
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```
1118          RX       0     500     800     805     820     825    1125    1625
1119          RY       7       6       5       0       0       5       6       7
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 30

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


1120          KK     79A
1121          KM   BASIN 79A
1122          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1123          KM    L=      2.3  Lca=      1.2   S=   23.2  Kn= .090  LAG= 106.0
1124          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1125          BA    2.01
1126          LG     .35     .30    8.00     .08     .00
1127          UI     64.     64.     64.     64.     82.    209.    232.    262.    299.    321.
1128          UI    347.    367.    390.    421.    458.    489.    527.    610.    726.    792.
1129          UI    825.    727.    655.    600.    557.    523.    495.    451.    417.    390.
1130          UI    361.    328.    308.    285.    244.    190.    169.    113.    113.    109.
1131          UI    105.    105.     85.     64.     64.     64.     64.     37.     20.     20.
1132          UI     20.     20.     20.     20.     20.     20.     20.     20.     20.     20.
1133          UI     20.     20.     20.      0.      0.      0.      0.      0.      0.      0.
1134          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1135          KK   C79A1
1136          KM   COMBINE FLOWS FROM 78C AND 79A
1137          HC       2
              *
              * DDM   ***** Updated *****

1138          KK     78F
1139          KM   BASIN 78F
1140          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1141          KM    L=      3.7  Lca=      2.1   S=   32.6  Kn= .090  LAG= 145.0
1142          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1143          BA    4.29
1144          LG     .35     .36    5.00     .27     .00
1145          UI    100.    100.    100.    100.    100.    100.    175.    327.    343.    382.
1146          UI    424.    461.    487.    521.    545.    567.    593.    623.    658.    700.
1147          UI    744.    773.    820.    900.   1011.   1171.   1200.   1341.   1235.   1122.
1148          UI   1042.    974.    920.    870.    831.    797.    765.    711.    669.    634.
1149          UI    603.    573.    530.    503.    482.    458.    403.    382.    288.    286.
1150          UI    214.    176.    176.    176.    165.    164.    164.    164.    111.    100.
1151          UI    100.    100.    100.    100.     89.     31.     31.     31.     31.     31.
1152          UI     31.     31.     31.     31.     31.     31.     31.     31.     31.     31.
1153          UI     31.     31.     31.     31.     31.     31.      0.      0.      0.      0.
1154          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1155          KK   78FTD
1156          KM   ROUTE FLOWS FROM 78F TO 78D VIA WASH
1157          RS       7    FLOW      -1
1158          RC    .045     .04    .045    6250   .0041
1159          RX       0     500     950    1003    1007    1061    1511    2011
1160          RY       5     4.5       4       0       0       4     4.5       5
              *
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1161          KK     78D
1162          KM   BASIN 78D
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1163        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1164        KM    L=      1.2  Lca=       .5   S=   21.7  Kn= .090  LAG=  58.6
1165        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1166        BA     .89
1167        LG     .35     .30    8.00     .07     .00
1168        UI     51.     51.     86.    181.    229.    266.    299.    338.    389.    466.
1169        UI    607.    635.    520.    449.    401.    346.    304.    260.    225.    166.
1170        UI    110.     89.     84.     68.     51.     51.     23.     16.     16.     16.
1171        UI     16.     16.     16.     16.      0.      0.      0.      0.      0.      0.
1172        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            *
            * DDM   ***** Preserved *****

1173        KK    C78D
1174        KM   COMBINE FLOWS FROM 82A WITH FLOWS FROM 78D
1175        HC       2
            *
            * DDM   ***** Updated *****

1176        KK    82A4
1177        KM   BASIN 82A4
1178        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1179        KM    L=      3.5  Lca=      1.5   S=   29.1  Kn= .090  LAG= 128.0
1180        KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1181        BA    2.13
1182        LG     .35     .36    5.10     .26     .00
1183        UI     56.     56.     56.     56.     56.     68.    161.    165.    219.    246.
1184        UI    281.    315.    347.    382.    396.    441.    465.    488.    501.    503.
1185        UI    535.    537.    537.    537.    536.    516.    502.    498.    475.    435.
1186        UI    402.    391.    355.    332.    309.    290.    271.    255.    242.    219.
1187        UI    207.    198.    175.    172.    154.    153.    130.    125.    122.    106.
1188        UI    106.    105.     86.     86.     86.     80.     59.     59.     59.     59.
1189        UI     59.     45.     38.     38.     38.     38.     38.     38.     38.     37.
1190        UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
1191        UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
1192        UI     14.     14.     14.     14.      0.      0.      0.      0.      0.      0.
1193        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            * DDM   ***** Preserved *****

1194        KK   R82A4
1195        KM   ROUTE FROM GERMANN RD NORTH FOR 1/2 MILE ALONG MERIDIAN RD TO 82A3.
1196        RS       4    FLOW      -1
1197        RC     .03     .03     .05    2640   .0015
1198        RX       0      50      75      83     113     121     146     196
1199        RY       4       4       4       0       0       1       2       3
            *
            * DDM   ***** Updated *****
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                                    HEC-1 INPUT

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


1200        KK    82A3
1201        KM   BASIN 82A3
1202        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1203        KM    L=      3.6  Lca=      2.0   S=   28.3  Kn= .090  LAG= 145.0
1204        KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1205        BA    2.02
1206        LG     .35     .36    5.00     .27     .00
1207        UI     47.     47.     47.     47.     47.     47.     76.    135.    136.    183.
1208        UI    196.    225.    254.    276.    299.    325.    331.    368.    387.    404.
1209        UI    416.    428.    426.    450.    450.    450.    450.    450.    437.    428.
1210        UI    424.    407.    394.    363.    338.    327.    307.    284.    270.    255.
1211        UI    240.    223.    213.    204.    185.    180.    166.    160.    144.    142.
1212        UI    129.    129.    112.    105.    105.     94.     89.     89.     86.     72.
1213        UI     72.     72.     72.     54.     50.     50.     50.     50.     50.     41.
1214        UI     32.     32.     32.     32.     32.     32.     32.     32.     32.     16.
1215        UI     11.     11.     11.     11.     11.     11.     11.     11.     11.     11.
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1216        UI     11.     11.     11.     11.     11.     11.     11.     11.     11.     11.
1217        UI     11.     11.     11.     11.     11.     11.      0.      0.      0.      0.
1218        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            * DDM   ***** Preserved *****

1219        KK   C82A3
1220        KM   COMBINE FLOWS FROM 82A4 AND 82A3
1221        HC       2
            *
            * DDM   ***** Preserved *****

1222        KK  RC82A3
1223        KM   ROUTE FROM 1/2 MILE NORTH OF GERMANN RD NORTHWEST ALONG DIKE TO PECOS RD.
1224        RS       4    FLOW      -1
1225        RC     .03     .03     .05    2700   .0015
1226        RX       0      50      75      83     113     121     146     196
1227        RY       4       4       4       0       0       1       2       3
            *
            * DDM   ***** Preserved *****

1228        KK    CAP2
1229        KM   INFLOW FROM EAST OF THE CAP THROUGH 1 - 36" PIPE OVERCHUTE
1230        KM   STATION #536+00 SALT-GILA AQUEDUCT REACH 2
1231        KM   QI CARDS BASED ON OVERCHUTE CAPACITY OF 64 CFS
1232        IN     60
1233        BA     .01
1234        QI       0      20      64      64      64      64      64      64      64      64
1235        QI      64      64      64      64      64      64      64      64      64      64
1236        QI      64      64      64      64      64
            *
            * DDM   ***** Preserved *****
1                                        HEC-1 INPUT
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1237        KK   RCAP2
1238        KM   ROUTE CAP2 THROUGH 82A VIA WASH
1239        IN      15
1240        RS      15    FLOW      -1
1241        RC    .045     .04    .045   24000    .005
1242        RX       0     500    1000    1010    1020    1030    1530    2030
1243        RY       8       5       3       0       0       3       5       8
            *
            * DDM   ***** Updated *****

1244        KK    82A2
1245        KM   BASIN 82A2
1246        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1247        KM    L=      4.6  Lca=      2.9   S=   27.2  Kn= .090  LAG= 185.0
1248        KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1249        BA    4.13
1250        LG     .35     .36    5.00     .27     .00
1251        UI     75.     75.     75.     75.     75.     75.     75.     75.    144.    216.
1252        UI    216.    257.    293.    316.    360.    389.    412.    455.    478.    508.
1253        UI    538.    523.    609.    617.    636.    660.    664.    689.    666.    720.
1254        UI    720.    720.    720.    720.    720.    720.    693.    689.    667.    681.
1255        UI    640.    631.    591.    557.    525.    523.    494.    463.    443.    420.
1256        UI    407.    384.    368.    353.    334.    326.    302.    293.    278.    266.
1257        UI    261.    230.    230.    221.    206.    206.    196.    168.    168.    168.
1258        UI    156.    142.    142.    142.    142.    117.    115.    115.    115.    115.
1259        UI    102.     80.     80.     80.     80.     80.     80.     80.     70.     51.
1260        UI     51.     51.     51.     51.     51.     51.     51.     51.     51.     51.
1261        UI     51.     21.     18.     18.     18.     18.     18.     18.     18.     18.
1262        UI     18.     18.     18.     18.     18.     18.     18.     18.     18.     18.
1263        UI     18.     18.     18.     18.     18.     18.     18.     18.     18.     18.
1264        UI     18.     18.     18.     18.     18.     18.      0.      0.      0.      0.
1265        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            * DDM   ***** Preserved *****
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1266          KK   C82A2
1267          KM   COMBINE FLOWS FROM CAP OVERCHUTE AND SUBBASIN 82A2
1268          HC       2
              *
              * DDM   ***** Updated *****

1269          KK    82A1
1270          KM   BASIN 82A1
1271          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1272          KM    L=      3.6  Lca=       .9   S=   33.9  Kn= .090  LAG= 103.0
1273          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1274          BA    3.12
1275          LG     .35     .36    5.00     .27     .00
1276          UI    102.    102.    102.    102.    152.    293.    357.    434.    517.    590.
1277          UI    660.    724.    799.    854.    901.    920.    967.    977.    977.    977.
1278          UI    941.    918.    880.    819.    734.    701.    622.    577.    532.    488.
1279          UI    451.    412.    381.    355.    313.    294.    279.    236.    228.    202.
1280          UI    192.    185.    156.    156.    151.    108.    108.    108.    108.     83.
1281          UI     70.     70.     70.     70.     70.     70.     37.     25.     25.     25.
1282          UI     25.     25.     25.     25.     25.     25.     25.     25.     25.     25.
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1283          UI     25.     25.     25.     25.     25.      0.      0.      0.      0.      0.
1284          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1285          KK    C82A
1286          KM   COMBINE ALL THE FLOWS AT 1/4 MILE WEST OF MERIDIAN RD AT PECOS RD.
1287          HC       3
              *
              * DDM   ***** Preserved *****

1288          KK   82ATD
1289          KM   ROUTE FLOW FROM SUBBASIN 82A TO 78D VIA WASH
1290          RS       4    FLOW      -1
1291          RC    .045     .04    .045    4250   .0056
1292          RX       0     500     950    1010    1025    1085    1535    2035
1293          RY       8       5       3       0       0       3       5       8
              *
              * DDM   ***** Preserved *****

1294          KK   C78D2
1295          KM   COMBINE FLOW FROM 82A WITH FLOW FROM C78D
1296          HC       2
              *
              * DDM   ***** Preserved *****

1297          KK   78DTE
1298          KM   ROUTE FLOWS FROM 78D TO 78E VIA WASH
1299          RS       6    FLOW      -1
1300          RC    .045     .04    .045    5280   .0041
1301          RX       0     500     950    1000    1010    1070    1511    2011
1302          RY       7       5       3       0       0       3       5       7
              *
              * DDM   ***** Updated *****

1303          KK     78E
1304          KM   BASIN 78E
1305          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1306          KM    L=      1.1  Lca=       .5   S=   17.4  Kn= .087  LAG=  57.4
1307          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1308          BA    1.01
1309          LG     .35     .26    8.80     .06    1.00
1310          UI     59.     59.    108.    212.    271.    313.    351.    402.    460.    565.
1311          UI    741.    698.    577.    502.    447.    382.    335.    289.    241.    166.
1312          UI    104.    100.     97.     60.     59.     45.     18.     18.     18.     18.
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1313          UI     18.     18.     18.     18.      0.      0.      0.      0.      0.      0.
1314          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1315          KK    C78E
1316          KM   COMBINE FLOWS FROM 78D AND 78E (CRISMAN ROAD)
1317          HC       2
              *
              *
              * DDM   ***** Preserved *****

1318          KK  78T79B
1319          KM   ROUTE FLOWS NORTH ALONG ELLSWORTH IN THE AIRFORCE PERIMETER CHANNEL
1320          RS       4    FLOW      -1
1321          RC   0.035   0.022   0.014    5280   0.002
1322          RX       0     100     120     130     160     170     220     240
1323          RY      10       7       6       0       0       6     6.5      10
              *
              * DDM   ***** Updated *****

1324          KK     79B
1325          KM   BASIN 79B
1326          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1327          KM    L=      1.4  Lca=       .6   S=    9.0  Kn= .090  LAG=  77.7
1328          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1329          BA    1.00
1330          LG     .35     .25    9.70     .05     .00
1331          UI     43.     43.     43.     85.    150.    179.    207.    232.    250.    275.
1332          UI    306.    335.    388.    479.    557.    515.    444.    396.    360.    331.
1333          UI    295.    267.    240.    216.    192.    155.    123.     76.     76.     71.
1334          UI     71.     48.     43.     43.     36.     13.     13.     13.     13.     13.
1335          UI     13.     13.     13.     13.     13.     13.      0.      0.      0.      0.
1336          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1337          KK    C79B
1338          KM   COMBINE 79B AND ROUTED 78C
1339          HC       2
              *
              * DDM   ***** Preserved *****

1340          KK     C79
1341          KM    COMBINE FLOWS FROM 79A AND 79B AT ELLSWORTH AND WILLIAMS FIELD
1342          KM    CHANNEL EAST SIDE OF GATEWAY WILLIAMS FLOWING TO THE NORTH
1343          HC       2
              *
              * DDM   ***** Preserved *****

1344          KK   79TCP
1345          KM   ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NORTH
1346          KM   PERIMETER CHANNEL
1347          RS       6    FLOW      -1
1348          RC    .035    .030    .035    8500   .0031
1349          RX       0    1000    2000    2017    2105    2122    3122    4122
1350          RY     8.5     7.5     6.5       0       0     7.5     8.5     9.5
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1351          KK   CPPWR
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1352          KM   COMBINE FLOWS FROM 75 AND 79 IN THE POWERLINE FLOODWAY ALONG RAY ROAD
1353          KM    AND AT HAWES ROAD.
1354          HC       2
              *
              * DDM   ***** Preserved *****

1355          KK  CPT80A
1356          KM   ROUTE CPPWR THROUGH AIR FORCE PERIMETER CHANNEL (POWERLINE FLOODWAY)
1357          RS       3    FLOW      -1
1358          RC    .055    .025    .055    9000    .0038
1359          RX       0    1005    1023    1040    1100    1117    1135    2140
1360          RY       9     8.5     8.5       0       0     8.5     8.5       9
              *
              * DDM   ***** Updated *****

1361          KK     80A
1362          KM   BASIN 80A
1363          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1364          KM    L=      3.8  Lca=      2.2   S=   14.2  Kn= .038  LAG=  73.7
1365          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1366          BA    2.64
1367          LG     .18     .16    9.70     .06   48.00
1368          UI    121.    121.    121.    289.    434.    526.    603.    666.    728.    807.
1369          UI    903.   1012.   1254.   1500.   1495.   1265.   1115.   1011.    924.    818.
1370          UI    737.    658.    586.    511.    394.    292.    213.    206.    198.    165.
1371          UI    121.    121.    117.     37.     37.     37.     37.     37.     37.     37.
1372          UI     37.     37.     37.     37.      0.      0.      0.      0.      0.      0.
1373          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

1374          KK  CPOWER
1375          KM   COMBINE FLOWS FROM C79A AND SUBBASIN 80A
1376          HC       2
              *
              * DDM   ***** Preserved *****

1377          KK  EMFPOW
1378          KM   EMF AT POWERLINE
1379          HC       2
              *
              * DDM   ***** Preserved *****

1380          KK  POWTWI
1381          KM   ROUTE EMF FLOW TO WILLIAMS FIELD ROAD VIA THE EMF
1382          KM   THIS SECTION IS CONCRETE LINE TO PAST POWER ROAD BRIDGE
1383          RS       2    FLOW      -1
1384          RC     .03    .012     .03    4750    .0003
1385          RX       0     500     520     553     693     726     740     742
1386          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Updated *****
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                                   HEC-1 INPUT

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


1387          KK     80B
1388          KM   BASIN 80B
1389          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1390          KM    L=      1.5  Lca=       .9   S=   18.4  Kn= .047  LAG=  44.7
1391          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1392          BA    1.12
1393          LG     .16     .18    6.80     .17   41.00
1394          UI     84.     84.    280.    381.    462.    538.    642.    853.   1055.    865.
1395          UI    718.    612.    509.    419.    324.    197.    145.    135.     84.     83.
1396          UI     26.     26.     26.     26.     26.     26.      0.      0.      0.      0.
1397          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
              * DDM   ***** Preserved *****
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1398          KK   MFWIL
1399          KM   COMBINE FLOWS INTO THE EMF WEST OF WILLIAMS AFB FROM 80A, EMFPOWERLINE AND
1400          KM   EMFRAY
1401          HC       2
              *
              * DDM   ***** Preserved *****

1402          KK  WILTSP
1403          KM   ROUTE EMF FLOW FROM WILLIAMS FIELD ROAD TO THE SOUTHERN PACIFIC RAILROAD
1404          KM     (AT RITTENHOUSE ROAD)
1405          RS       3    FLOW      -1
1406          RC     .03    .022     .03    5000   .0003
1407          RX       0     500     520     553     693     726     740     742
1408          RY      14      12      11       0       0      11      11      12
              * DDM   ***** Updated *****

1409          KK     82B
1410          KM   BASIN 82B
1411          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1412          KM    L=        .9  Lca=        .4   S=   21.2  Kn= .090  LAG=  17.2
1413          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1414          BA     .92
1415          LG     .35     .36    5.00     .27     .00
1416          UI    266.    879.   1420.   2004.   1268.    727.    294.    142.     55.     55.
1417          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1418          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1419          KK   DTTRW
1420          KM    DIVERTING 110.7 ACRE-FEET DUE TO ON-SITE RETENTION
1421          KM   VOLUMES WERE DERIVED FROM DRAINAGE REPORT - REFERENCE 7.
1422          DT     TRW   110.7
1423          DI       0   10000
1424          DQ       0   10000
              * DDM   ***** Preserved *****
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                                          HEC-1 INPUT

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


1425          KK  82BT83
1426          KM     ROUTE 82B TO S83 VIA PECOS ROAD
1427          RS       6    FLOW      -1
1428          RC    .045    .025    .045    5260   .0032
1429          RX       0     500    1000    1002    1006    1046    1546    2046
1430          RY     4.5     4.0      .5       0       0      .5     4.5     5.5
              * DDM   ***** Updated *****

1431          KK      83
1432          KM   BASIN 83
1433          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1434          KM    L=       2.0  Lca=        .5   S=   15.0  Kn= .098  LAG=  84.4
1435          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1436          BA    1.01
1437          LG     .49     .25    5.00     .42    1.00
1438          UI     40.     40.     40.     51.    132.    153.    183.    202.    221.    238.
1439          UI    258.    288.    311.    354.    440.    497.    506.    435.    386.    352.
1440          UI    325.    299.    267.    245.    222.    201.    184.    152.    115.     85.
1441          UI     71.     69.     66.     62.     40.     40.     40.     33.     12.     12.
1442          UI     12.     12.     12.     12.     12.     12.     12.     12.     12.     12.
1443          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1444          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

1445          KK     C83
1446          KM     COMBINE C82B AND 83
1447          HC       2
              * DDM   ***** Preserved *****
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1448          KK   83T84
1449          KM     ROUTE S83 TO S84 VIA PECOS ROAD
1450          RS       6    FLOW      -1
1451          RC     .06    .055    .065    5260   .0032
1452          RX       0     500    1000    1002    1006    1046    1546    2046
1453          RY       4     3.5      .5      .5     3.5     4.5       5     5.5
              * DDM   ***** Updated *****

1454          KK      84
1455          KM   BASIN 84
1456          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1457          KM    L=      2.0  Lca=       .5   S=   12.5  Kn= .100  LAG=  89.1
1458          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1459          BA     .99
1460          LG     .50     .25    4.70     .48     .00
1461          UI     37.     37.     37.     37.    114.    136.    160.    180.    199.    214.
1462          UI    229.    252.    276.    298.    345.    419.    475.    465.    404.    361.
1463          UI    330.    306.    284.    256.    233.    216.    192.    178.    156.    126.
1464          UI    105.     66.     66.     63.     61.     55.     37.     37.     37.     33.
1465          UI     11.     11.     11.     11.     11.     11.     11.     11.     11.     11.
1466          UI     11.     11.     11.      0.      0.      0.      0.      0.      0.      0.
1467          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1468          KK     C84
1469          KM     COMBINE C83 AND 84
1470          HC       2
              * DDM   ***** Preserved *****

1471          KK   84T85
1472          KM    ROUTE S84 TO S85 VIA WAFB SOUTH PERIMETER CHANNEL
1473          RS       4    FLOW      -1
1474          RC    0.06   0.035    0.06    5260   .0039
1475          RX       0     500    1000    1013    1028    1041    1541    2041
1476          RY     5.5       5     4.5       0       0     4.5       5     5.5
              * DDM   ***** Updated *****

1477          KK      85
1478          KM   BASIN 85
1479          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1480          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .100  LAG=  86.1
1481          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1482          BA    1.00
1483          LG     .50     .25    4.35     .60     .00
1484          UI     39.     39.     39.     43.    129.    147.    175.    194.    214.    228.
1485          UI    250.    274.    300.    332.    392.    475.    517.    446.    394.    357.
1486          UI    328.    305.    274.    249.    230.    204.    188.    165.    132.    108.
1487          UI     70.     70.     65.     65.     53.     39.     39.     39.     26.     12.
1488          UI     12.     12.     12.     12.     12.     12.     12.     12.     12.     12.
1489          UI     12.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1490          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

1491          KK     C85
1492          KM    COMBINE C84 AND 85
1493          HC       2
              * DDM   ***** Preserved *****

1494          KK   85T86
1495          KM     ROUTE S85 TO S86 VIA WAFB SOUTH PERIMETER CHANNEL
1496          RS       4    FLOW      -1
1497          RC   0.055   0.035   0.055    5280   .0039
1498          RX       0     500    1000    1013    1028    1041    1541    2041
1499          RY     5.5       5     4.5       0       0     4.5       5     5.5
              * DDM   ***** Updated *****
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1500          KK      86
1501          KM   BASIN 86
1502          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1503          KM    L=       2.0  Lca=        .5   S=   15.0  Kn= .100  LAG=  86.1
1504          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1505          BA    1.00
1506          LG     .50      .25     4.55      .53      .00
1507          UI     39.      39.      39.      43.     129.     146.     174.     193.     213.     227.
1508          UI    249.     273.     299.     331.     390.     473.     515.     445.     392.     355.
1509          UI    326.     304.     273.     248.     229.     203.     187.     165.     132.     108.
1510          UI     69.      69.      65.      64.      53.      39.      39.      39.      26.      12.
1511          UI     12.      12.      12.      12.      12.      12.      12.      12.      12.      12.
1                                             HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1512          UI     12.       0.       0.       0.       0.       0.       0.       0.       0.       0.
1513          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              * DDM   ***** Preserved *****

1514          KK     C86
1515          KM     COMBINE 85 AND 86
1516          HC       2
              * DDM   ***** Preserved *****

1517          KK   86T91
1518          KM     ROUTE S86 TO S91 VIA WAFB SOUTH PERIMETER CHANNEL. Grassy v=3ft/sec
1519          RS       6    FLOW      -1
1520          RC    0.05   0.035    0.05    5500   .0025
1521          RX       0     500    1000    1013    1028    1041    1541    2041
1522          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              * DDM   ***** Updated *****

1523          KK     87A
1524          KM   BASIN 87A
1525          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1526          KM    L=       1.0  Lca=        .5   S=   24.9  Kn= .100  LAG=  58.5
1527          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1528          BA     .49
1529          LG     .50      .25     5.00      .42      .00
1530          UI     28.      28.      48.     101.     127.     148.     166.     188.     216.     260.
1531          UI    339.     351.     288.     249.     222.     192.     169.     144.     124.      92.
1532          UI     60.      49.      47.      37.      28.      28.      12.       9.       9.       9.
1533          UI      9.       9.       9.       9.       0.       0.       0.       0.       0.       0.
1534          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              * DDM   ***** Preserved *****

1535          KK   87ATB
1536          KM   ROUTE 87A TO 87B VIA SHEET FLOW
1537          RS       3    FLOW      -1
1538          RC    .040    .040    .040    2640   .0056
1539          RX       0     500    1000    1005    1006    1011    1511    2011
1540          RY       1      .5       0       0       0      .5       1     1.5
              *
              * DDM   ***** Updated *****

1541          KK     87B
1542          KM   BASIN 87B
1543          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1544          KM    L=        .9  Lca=        .5   S=   11.6  Kn= .100  LAG=  63.8
1545          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1546          BA     .49
1547          LG     .50      .25     5.00      .42      .00
1548          UI     26.      26.      30.      88.     108.     127.     144.     159.     181.     203.
1549          UI    246.     314.     325.     269.     234.     210.     186.     163.     144.     126.
1550          UI    107.      78.      50.      45.      43.      36.      26.      26.      18.       8.
1551          UI      8.       8.       8.       8.       8.       8.       8.       8.       0.       0.
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1552          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 41

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


1553          KK     C87
1554          KM   COMBINE FLOW FROM SUBBASINS 87A AND 87B
1555          HC       2
              *
              * DDM   ***** Preserved *****

1556          KK  87T88B
1557          KM     ROUTE S87 TO S88 VIA GERMANN ROAD
1558          RS       6    FLOW      -1
1559          RC    .045    .025    .045    5280    .002
1560          RX       0    1000    1005    1010    1050    1060    1560    2060
1561          RY      14      13      18      12      11      14    14.5      15
              *
              * DDM   ***** Updated *****

1562          KK     88A
1563          KM   BASIN 88A
1564          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1565          KM    L=        .8  Lca=        .2   S=   13.2  Kn= .100  LAG=  46.2
1566          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1567          BA     .50
1568          LG     .50     .25    5.00     .42     .00
1569          UI     37.     37.    114.    161.    196.    227.    270.    336.    458.    406.
1570          UI    331.    284.    237.    199.    164.    116.     66.     61.     49.     37.
1571          UI     28.     11.     11.     11.     11.     11.     11.      0.      0.      0.
1572          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1573          KK   88ATB
1574          KM   ROUTE FLOWS FROM SUBBASIN 88A TO 88B VIA SHEET FLOW
1575          RS       4    FLOW      -1
1576          RC     .04     .04     .04    2640   .0090
1577          RX       0     500    1000    1001    1002    1500    2000    2500
1578          RY       1     1.5       0       0       0      .5       1     1.5
              *
              * DDM   ***** Updated *****

1579          KK     88B
1580          KM   BASIN 88B
1581          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1582          KM    L=        .9  Lca=        .6   S=   21.2  Kn= .100  LAG=  63.8
1583          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1584          BA     .50
1585          LG     .50     .25    5.00     .42     .00
1586          UI     26.     26.     30.     89.    109.    129.    146.    161.    183.    206.
1587          UI    249.    318.    329.    272.    237.    213.    189.    165.    146.    128.
1588          UI    108.     79.     51.     46.     43.     36.     26.     26.     18.      8.
1589          UI      8.      8.      8.      8.      8.      8.      8.      8.      0.      0.
1590          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 42

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


1591          KK    C88B
1592          KM   COMBINE FLOWS FROM SUBBASINS 88A AND 88B
1593          HC       2
              *
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                 * DDM   ***** Preserved *****

1594             KK     C88
1595             KM    COMBINE 87 AND 88
1596             HC       2
                 * DDM   ***** Preserved *****

1597             KK   88T89
1598             KM     ROUTE S88 TO S89 VIA GERMANN ROAD
1599             RS       6    FLOW      -1
1600             RC    .045    .025    .045    5280    .004
1601             RX       0    1000    1005    1010    1050    1060    1560    2060
1602             RY      14      13      18      12      11      14    14.5      15
                 *
                 * DDM   ***** Updated *****

1603             KK     89A
1604             KM   BASIN 89A
1605             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1606             KM    L=      1.0  Lca=       .6   S=   19.0  Kn= .100  LAG=  67.5
1607             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1608             BA     .50
1609             LG     .50     .25    4.65     .50     .00
1610             UI     25.     25.     25.     76.     97.    118.    133.    146.    162.    184.
1611             UI    207.    264.    313.    294.    249.    220.    199.    177.    156.    139.
1612             UI    123.    106.     80.     56.     44.     41.     41.     26.     25.     25.
1613             UI     11.      8.      8.      8.      8.      8.      8.      8.      8.      8.
1614             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1615             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1616             KK   89ATB
1617             KM   ROUTE FLOWS FROM SUBBASIN 89A TO 89B VIA SHEET FLOW
1618             RS       4    FLOW      -1
1619             RC    .040    .040    .040    2640   .0037
1620             RX       0     500    1000    1001    1002    1500    2000    2500
1621             RY       1      .5       0       0       0      .5       1     1.5
                 *
                 * DDM   ***** Updated *****

1622             KK     89B
1623             KM   BASIN 89B
1624             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1625             KM    L=       .9  Lca=       .5   S=   23.2  Kn= .100  LAG=  58.3
1626             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1627             BA     .50
1628             LG     .50     .25    4.80     .46     .00
1629             UI     29.     29.     49.    102.    129.    150.    169.    191.    219.    265.
1630             UI    346.    353.    289.    250.    223.    193.    169.    145.    123.     91.
1                                             HEC-1 INPUT
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1631             UI     58.     50.     47.     36.     29.     29.     10.      9.      9.      9.
1632             UI      9.      9.      9.      9.      0.      0.      0.      0.      0.      0.
1633             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1634             KK    C89B
1635             KM   COMBINE FLOWS FROM SUBBASINS 89A AND 89B
1636             HC       2
                 *
                 * DDM   ***** Preserved *****

1637             KK     C89
1638             KM   COMBINE FLOWS FROM C89B AND C88
1639             HC       2
                 *
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                 * DDM   ***** Preserved *****

1640             KK   89T90
1641             KM    ROUTE S89 TO S90 VIA GERMANN ROAD
1642             RS      10    FLOW      -1
1643             RC    .045    .025    .045    8818    .0045
1644             RX       0    1000    1005    1010    1050    1060    1560    2060
1645             RY      14      13      18      12      11      14    14.5      15
                 *
                 * DDM   ***** Updated *****

1646             KK     90A
1647             KM   BASIN 90A
1648             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1649             KM    L=        .6  Lca=        .2   S=   24.2  Kn= .099  LAG=  33.4
1650             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1651             BA     .48
1652             LG     .49     .26    4.60     .50    1.00
1653             UI     48.    100.    211.    273.    340.    469.    589.    448.    359.    281.
1654             UI    215.    120.     82.     61.     46.     15.     15.     15.     15.      0.
1655             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1656             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1657             KK   90ATB
1658             KM   ROUTE FLOWS FROM SUBBASIN 90A TO 90B VIA SHEET FLOW
1659             RS       7    FLOW      -1
1660             RC    .055     .04    .055    4000   .0037
1661             RX       0     500    1000    1001    1002    1500    2000    2500
1662             RY       1      .5       0       0       0      .5       1     1.5
                 *
                 * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 44

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


1663             KK     90B
1664             KM   BASIN 90B
1665             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1666             KM    L=       2.0  Lca=       1.2   S=   15.3  Kn= .068  LAG=  80.7
1667             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1668             BA     .82
1669             LG     .35     .27    4.65     .36    3.00
1670             UI     34.     34.     34.     57.    116.    137.    162.    178.    195.    211.
1671             UI    233.    258.    284.    339.    413.    450.    385.    339.    305.    281.
1672             UI    258.    230.    209.    189.    170.    152.    123.     99.     62.     61.
1673             UI     57.     57.     43.     34.     34.     34.     13.     11.     11.     11.
1674             UI     11.     11.     11.     11.     11.     11.     11.     11.      0.      0.
1675             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1676             KK    C90B
1677             KM   COMBINE FLOWS FROM 90A AND 90B
1678             HC       2
                 *
                 * DDM   ***** Preserved *****

1679             KK     C90
1680             KM    COMBINE C89 AND C90B
1681             HC       2
                 *
                 * DDM   ***** Preserved *****

1682             KK   90T91
1683             KM    ROUTE S90 TO S91 VIA SPRR
1684             RS       7    FLOW      -1
1685             RC    .045    .022    .045    6178    .004
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```
1686          RX       0     500    1000    1015    1065    1076    1576    2076
1687          RY       5     4.5       4       0       0       5     5.5       6
              * DDM   ***** Updated *****

1688          KK      91
1689          KM   BASIN 91
1690          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1691          KM    L=      1.4  Lca=       .6   S=   18.4  Kn= .089  LAG=  67.3
1692          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1693          BA     .46
1694          LG     .37     .33    4.65     .31    2.00
1695          UI     23.     23.     23.     71.     90.    109.    123.    135.    151.    171.
1696          UI    193.    247.    291.    271.    229.    203.    183.    163.    144.    128.
1697          UI    113.     97.     73.     50.     41.     38.     38.     23.     23.     23.
1698          UI      9.      7.      7.      7.      7.      7.      7.      7.      7.      7.
1699          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1700          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 45

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


1701          KK    CP91
1702          KM     COMBINE 91, 90,AND 86 AT EMF NEAR THE RITTENHOUSE CHANNEL
1703          HC       3
              *
              * DDM   ***** Preserved *****

1704          KK     R91
1705          KM   ROUTE 91 TO EMF
1706          RS       4    FLOW      -1
1707          RC   0.035   0.022   0.035    4000   0.003
1708          RX       0     100     130     140     170     180     210     310
1709          RY       8       7       6       0       0       6       7       8
              *
              * DDM   ***** Updated *****

1710          KK     81A
1711          KM   BASIN 81A
1712          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1713          KM    L=      3.3  Lca=      1.9   S=   16.4  Kn= .032  LAG=  54.1
1714          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1715          BA    1.81
1716          LG     .16     .25    4.70     .40   53.00
1717          UI    113.    113.    245.    427.    541.    626.    705.    821.    963.   1272.
1718          UI   1432.   1160.    989.    874.    746.    645.    552.    447.    298.    200.
1719          UI    188.    164.    113.    113.     50.     35.     35.     35.     35.     35.
1720          UI     35.     35.      0.      0.      0.      0.      0.      0.      0.      0.
1721          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1722          KK   81ATB
1723          KM   ROUTE SUBASIN 81A TO 81B VIA ROAD NETWORK FOR ON-BASE HOUSEING
1724          RS       9    FLOW      -1
1725          RC    .013    .013    .013    8000   .0035
1726          RX       0     500     750     753    1053    1056    1303    1803
1727          RY       3     1.5       1      .6      .6       1     1.5       3
              *
              * DDM   ***** Updated *****

1728          KK     81B
1729          KM   BASIN 81B
1730          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1731          KM    L=      1.1  Lca=       .4   S=    6.9  Kn= .065  LAG=  48.6
1732          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1733          BA     .84
1734          LG     .28     .29    4.70     .33   21.00
1735          UI     58.     58.    163.    246.    302.    346.    408.    483.    650.    729.
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1736          UI    580.    492.    425.    357.    301.    247.    165.    103.     97.     77.
1737          UI     58.     48.     18.     18.     18.     18.     18.     18.     18.      0.
1738          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1739          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                      *
                      * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1740          KK  RITTEN
1741          KM   COMBINE FLOWS AT RITTENHOUSE ROAD BEFORE ENTERING INTO THE EMF.
1742          HC       3
                      *
                      * DDM   ***** Preserved *****

1743          KK  EMFRIT
1744          KM   COMBINE 81A AND 81B AND RITTENHOUSE
1745          HC       2
1746          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    66        SOSS
                 V
                 V
    71       RSOSS
                 .
                 .
    77           .          59A
                 .            .
                 .            .
    87        C59A............
                 V
                 V
    90      59A59B
                 .
                 .
    97           .          59B
                 .            .
                 .            .
   109        C59B............
                 V
                 V
   112      59BT60
                 .
                 .
   118           .           60
                 .            .
                 .            .
   136           .            .-------->     D60
   134           .          R60
                 .            .
                 .            .
   139      EMFGUA............
                 V
                 V
   142      GUATEL
                 .
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   148           .           64
                 .            .
                 .            .
   161      EMFELL............
                 V
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                V
164       ELTWAR
                .
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170             .          61A
                .            V
                .            V
181             .        61ATB
                .            .
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187             .            .          61B
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                .            .            .
200             .        CP61B............
                .            V
                .            V
203             .       61T62E
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209             .            .          62E
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220             .         C62E............
                .            V
                .            V
223             .        62ETF
                .            .
                .            .
229             .            .          62A
                .            .            V
                .            .            V
240             .            .        62ATD
                .            .            .
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246             .            .            .          62B
                .            .            .            V
                .            .            .            V
257             .            .            .        62BTD
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263             .            .            .            .          62D
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274             .            .        CP62D.......................
                .            .            V
                .            .            V
277             .            .        62DTF
                .            .            .
                .            .            .
283             .            .            .          62C
                .            .            .            V
                .            .            .            V
294             .            .            .        62CTF
                .            .            .            .
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300             .            .            .            .          62F
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                .            .            .            .            .
311             .         CP62...................................
                .            V
                .            V
314             .        62T63
                .            .
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321             .            .           63
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                .            .            .
336             .         CP63............
                .            V
                .            V
339             .        63T71
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346          ADOT-E
                V
                V
351          AET67A
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358                .        67A
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                .          .
370           C67A............
                V
                V
373           67ATC
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379                .      SUP2
                .         V
                .         V
383                .     RSUP2
                .          .
                .          .
390                .          .        67B
                .          .          .
                .          .          .
402                .      C67B............
                .         V
                .         V
405                .     67BTC
                .          .
                .          .
412                .          .        67C
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                .          .          .
424           C67C........................
                V
                V
427           67CTE
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433                .        67D
                .         V
                .         V
444                .     67DTE
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450                .          .        67E
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462           CP67E........................
                V
                V
465           67T68
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471                .        68A
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482           C68A............
                V
                V
485           68ATB
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491                .        68B
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502           CP68B............
                V
                V
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505          .            .      68BT69
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511          .            .          .          69
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522          .            .        C69............
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             .            .          V
525          .            .      69T71
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531          .            .          .          71
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545          .       CP71.......................
             .          V
             .          V
548          .      71T72
             .            .
             .            .
555     EMFWAR............
             V
             V
558     WARTKN
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564          .      CAP1A
             .          V
             .          V
573          .      RCA1A
             .            .
             .            .
580          .            .      CAP1B
             .            .          V
             .            .          V
589          .            .     RCAP1B
             .            .          .
             .            .          .
596          .            .          .        65AW
             .            .          .           .
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606          .      C65AW.......................
             .          V
             .          V
609          .     65AWTB
             .            .
             .            .
615          .            .        65A
             .            .          V
             .            .          V
628          .            .      65ATB
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             .            .          .
634          .            .          .        65B
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648          .      CP65B.......................
             .          V
             .          V
651          .      65T66
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657          .            .        66A
             .            .          V
             .            .          V
667          .            .      66ATB
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673          .            .          .        66B
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686                 .           .           .           .
                    .           .       CP66B...........
                    .           .           V
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689                 .           .       66BTC
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695                 .           .           .         66C
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707                 .           .       CP66C...........
                    .           .           V
                    .           .           V
710                 .           .       66CTD
                    .           .           .
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716                 .           .           .         66D
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728                 .           .        C66D...........
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731                 .        CP66...........
                    .           V
                    .           V
734                 .      66DT70
                    .           .
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741                 .           .         70A
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753                 .        C70A...........
                    .           V
                    .           V
756                 .       70ATB
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762                 .           .         70B
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774                 .       CP70B...........
                    .           V
                    .           V
777                 .      70BT76
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783                 .           .         76B
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797                 .       CP76B...........
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800                 .           .          72
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813                 .        KNOX...........
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                    .           .
816            EMFKNX...........
                    V
                    V
819            KNXTRY
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825                 .         76A
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842            EMFRAY...........
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846                 .         73A
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                 .          V
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860              .      73ATB
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866              .          .          73B
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877              .     CP73B.............
                 .          V
                 .          V
880              .      73BTC
                 .          .
                 .          .
887              .          .          73C
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                 .          .            .
897              .     CP73C.............
                 .          V
                 .          V
900              .     73T74C
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                 .          .
906              .          .          74A
                 .          .            V
                 .          .            V
920              .          .        74ATB
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926              .          .            .          74B
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937              .          .      CP74B.............
                 .          .            V
                 .          .            V
940              .          .      74BTC
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946              .          .            .          74C
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957              .     CP74C........................
                 .          V
                 .          V
960              .     74CT75
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966              .          .           75
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985              .      CP75.............
                 .          V
                 .          V
988              .      75TCP
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994              .          .          77A
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                 .          .            V
1010             .          .      77ATB
                 .          .            .
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1016             .          .            .          77B
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1026             .          .      CP77B.............
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                 .          .            V
1029             .          .      77BTC
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1036                                77C
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1047                        C77C............
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                                V
1050                      77CT78
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1055                                78A
                                     V
                                     V
1072                              78ATB
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1078                                                 78B
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1088                              C78B............
                                     V
                                     V
1091                              78BTC
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1098                                                 78C
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1108                              C78C............
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1111                        C78C2...........
                                V
                                V
1114                      78CT79
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1120                                79A
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1135                        C79A1...........
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1138                                78F
                                     V
                                     V
1155                              78FTD
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1161                                                 78D
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1173                              C78D............
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1176                                                82A4
                                     .                 V
                                     .                 V
1194                                               R82A4
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1200                                                 .        82A3
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1219                                               C82A3............
                                     .                 V
                                     .                 V
1222                                              RC82A3
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1228                                                 .        CAP2
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1237                                                           RCAP2
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1244                                                              .        82A2
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1266                                                           C82A2...........
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1269                                                              .        82A1
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1285                                                       C82A.......................
                                                              V
                                                              V
1288                                                       82ATD
                                                              .
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1294                                            C78D2............
                                                   V
                                                   V
1297                                            78DTE
                                                   .
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1303                                                          78E
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1315                                             C78E............
                                                   V
                                                   V
1318                                           78T79B
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1324                                                          79B
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1337                                             C79B............
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1340                                     C79............
                                            V
                                            V
1344                                     79TCP
                                            .
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1351                          CPPWR............
                                 V
                                 V
1355                          CPT80A
                                 .
                                 .
1361                                     80A
                                            .
                                            .
1374                          CPOWER...........
                                 .
                                 .
1377                 EMFPOW............
                        V
                        V
1380                 POWTWI
                        .
                        .
1387                                 80B
                                     .
                                     .
1398                  MFWIL...........
                        V
                        V
1402                 WILTSP
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1409          82B
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                .
1422            .-------->     TRW
1419       DTTRW
               V
               V
1425      82BT83
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1431            .          83
                .           .
                .           .
1445          C83............
               V
               V
1448       83T84
                .
                .
1454            .          84
                .           .
                .           .
1468          C84............
               V
               V
1471       84T85
                .
                .
1477            .          85
                .           .
                .           .
1491          C85............
               V
               V
1494       85T86
                .
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1500            .          86
                .           .
                .           .
1514          C86............
               V
               V
1517       86T91
                .
                .
1523            .         87A
                .           V
                .           V
1535            .       87ATB
                .           .
                .           .
1541            .           .         87B
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                .           .           .
1553            .         C87............
                .           V
                .           V
1556            .      87T88B
                .           .
                .           .
1562            .           .         88A
                .           .           V
                .           .           V
1573            .           .       88ATB
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1579            .           .           .         88B
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1591                                  C88B............
1594                        C88............
                              V
                              V
1597                      88T89
1603                                    89A
                                         V
                                         V
1616                                   89ATB
1622                                                      89B
1634                                   C89B............
1637                        C89............
                              V
                              V
1640                      89T90
1646                                    90A
                                         V
                                         V
1657                                   90ATB
1663                                                      90B
1676                                   C90B............
1679                        C90............
                              V
                              V
1682                      90T91
1688                                     91
1701                  CP91......................
                        V
                        V
1704                  R91
1710                        81A
                              V
                              V
1722                      81ATB
1728                                    81B
1740                RITTEN......................
1743            EMFRIT............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1********** **********

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*                                        *                                  *                                        *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *                                  *    U.S. ARMY CORPS OF ENGINEERS        *
*              JUL   1997                *                                  *    HYDROLOGIC ENGINEERING CENTER       *
*           VERSION 4.1                  *                                  *          609 SECOND STREET             *
*                                        *                                  *       DAVIS, CALIFORNIA 95616          *
*  RUN DATE   25JUN98  TIME  08:40:08    *                                  *           (916) 756-1104               *
*                                        *                                  *                                        *
*****************************************                                  ****************************************
```

SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
MARCH 1998
SOUTHEAST MESA HIGH RESOLUTION MODEL

FILENAME: SEMP100S.DAT

THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 73 SQ. MI.
THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW CONDITIONS.

100-YEAR 24-HOUR FREQUENCY

THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY AND EAST OF THE CAP

METHODOLOGY
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS DATED 1994
THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS

STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL

NOTE: MUST USE SEMP100N.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS SUPERSTITN

LAST UPDATED ON 6/02/98

DDM MCUHP2 SOUTH EAST MESA ADMP - SOUTH OF SUPERSTITION FREEWAY

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

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE     1APR97  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     4APR97  ENDING DATE
                    NDTIME       1115  ENDING TIME
```

ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 83.25 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

49 JD INDEX STORM NO. 1
STRM 3.60 PRECIPITATION DEPTH
TRDA .01 TRANSPOSITION DRAINAGE AREA

50 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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60 JD INDEX STORM NO. 2
STRM 3.58 PRECIPITATION DEPTH
TRDA 1.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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61 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

62 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

63 JD INDEX STORM NO. 5

STRM 3.24 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

64 JD INDEX STORM NO. 6

STRM 3.10 PRECIPITATION DEPTH

TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

```
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00

  65 JD          INDEX STORM NO. 7
                        STRM        3.05  PRECIPITATION DEPTH
                        TRDA       90.00  TRANSPOSITION DRAINAGE AREA

   0 PI            PRECIPITATION PATTERN
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .01       .00       .01
.01       .01       .01       .01       .01       .01       .01       .01       .03       .03
.03       .09       .09       .09       .01       .01       .01       .01       .01       .01
.01       .01       .01       .01       .01       .01       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00

   -----DSS---ZOPEN:  Existing File Opened,  File: SEMP100N.DSS
                      Unit:  71;  DSS Version: 6-EA
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
```

```
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97        JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97        JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
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```
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97        JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97        JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97        JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
```

```
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97       JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97       JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97       JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
```

```
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97       JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97       JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97       JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97       JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
```

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        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97        JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97        JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
```

```
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97       JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97       JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97       JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
         WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
         WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                          SOSS    1800.   12.58        763.        241.         95.     12.50

          ROUTED TO
+                         RSOSS    1800.   12.75        763.        241.         95.     12.50

          HYDROGRAPH AT
+                           59A     298.   12.33         41.         13.          4.       .26

          2 COMBINED AT
+                          C59A    1915.   12.67        800.        253.         99.     12.76

          ROUTED TO
+                        59A59B    1894.   12.83        799.        253.         99.     12.76

          HYDROGRAPH AT
+                           59B     582.   12.92        125.         36.         12.       .94

          2 COMBINED AT
+                          C59B    2416.   12.83        911.        285.        110.     13.70

          ROUTED TO
```

+	59BT60	2420.	12.92	911.	285.	110.	13.70
HYDROGRAPH AT +	60	853.	13.75	302.	88.	30.	2.30
DIVERSION TO +	D60	853.	13.75	187.	50.	17.	2.30
HYDROGRAPH AT +	R60	636.	14.17	139.	38.	13.	2.30
2 COMBINED AT +	EMFGUA	2420.	12.92	1015.	317.	120.	16.00
ROUTED TO +	GUATEL	2241.	13.42	1008.	315.	120.	16.00
HYDROGRAPH AT +	64	435.	13.00	86.	22.	7.	.81
2 COMBINED AT +	EMFELL	2483.	13.33	1078.	334.	126.	16.81
ROUTED TO +	ELTWAR	2321.	13.75	1069.	333.	126.	16.81
HYDROGRAPH AT +	61A	381.	12.50	53.	15.	5.	.52
ROUTED TO +	61ATB	293.	13.08	53.	15.	5.	.52
HYDROGRAPH AT +	61B	488.	13.00	95.	24.	8.	1.09
2 COMBINED AT +	CP61B	768.	13.00	146.	38.	13.	1.61
ROUTED TO +	61T62E	658.	13.42	146.	38.	13.	1.61
HYDROGRAPH AT +	62E	137.	12.42	16.	4.	1.	.15
2 COMBINED AT +	C62E	660.	13.42	161.	42.	14.	1.76
ROUTED TO +	62ETF	621.	13.75	161.	42.	14.	1.76
HYDROGRAPH AT +	62A	230.	12.67	35.	10.	3.	.38
ROUTED TO +	62ATD	106.	14.25	35.	10.	3.	.38
HYDROGRAPH AT +	62B	215.	12.42	25.	7.	2.	.23
ROUTED TO +	62BTD	181.	12.75	25.	7.	2.	.23
HYDROGRAPH AT +	62D	320.	12.58	43.	11.	4.	.46
3 COMBINED AT +	CP62D	504.	12.67	102.	27.	9.	1.07
ROUTED TO +	62DTF	357.	13.25	102.	27.	9.	1.07

+	HYDROGRAPH AT	62C	535.	12.42	63.	17.	6.	.55
+	ROUTED TO	62CTF	413.	12.83	63.	17.	6.	.55
+	HYDROGRAPH AT	62F	230.	12.42	27.	7.	2.	.26
+	4 COMBINED AT	CP62	968.	13.08	343.	90.	30.	3.64
+	ROUTED TO	62T63	930.	13.83	343.	90.	30.	3.64
+	HYDROGRAPH AT	63	321.	13.58	93.	24.	8.	.91
+	2 COMBINED AT	CP63	1204.	13.67	430.	112.	38.	4.55
+	ROUTED TO	63T71	937.	15.33	416.	112.	38.	4.55
+	HYDROGRAPH AT	ADOT-E	267.	14.25	200.	73.	25.	.01
+	ROUTED TO	AET67A	266.	14.50	200.	73.	25.	.01
+	HYDROGRAPH AT	67A	216.	12.67	35.	10.	3.	.30
+	2 COMBINED AT	C67A	286.	12.75	222.	82.	28.	.31
+	ROUTED TO	67ATC	269.	14.75	221.	82.	28.	.31
+	HYDROGRAPH AT	SUP2	745.	12.08	421.	275.	94.	.01
+	ROUTED TO	RSUP2	462.	12.75	415.	274.	94.	.01
+	HYDROGRAPH AT	67B	319.	12.92	63.	17.	6.	.53
+	2 COMBINED AT	C67B	775.	12.83	464.	291.	100.	.54
+	ROUTED TO	67BTC	630.	13.92	462.	291.	100.	.54
+	HYDROGRAPH AT	67C	583.	12.83	101.	25.	8.	.93
+	3 COMBINED AT	C67C	1141.	12.92	753.	397.	136.	1.78
+	ROUTED TO	67CTE	1001.	13.75	739.	396.	136.	1.78
+	HYDROGRAPH AT	67D	114.	12.50	14.	3.	1.	.13
+	ROUTED TO	67DTE	82.	13.17	14.	3.	1.	.13
+	HYDROGRAPH AT	67E	353.	12.92	66.	16.	5.	.58

+	3 COMBINED AT	CP67E	1085.	13.67	763.	415.	142.	2.49
+	ROUTED TO	67T68	1046.	14.00	762.	415.	142.	2.49
+	HYDROGRAPH AT	68A	327.	12.50	41.	11.	4.	.35
+	2 COMBINED AT	C68A	1046.	14.00	763.	425.	146.	2.84
+	ROUTED TO	68ATB	1044.	14.08	763.	425.	146.	2.84
+	HYDROGRAPH AT	68B	237.	12.42	27.	7.	2.	.25
+	2 COMBINED AT	CP68B	1043.	14.08	769.	432.	148.	3.09
+	ROUTED TO	68BT69	1001.	14.58	764.	431.	148.	3.09
+	HYDROGRAPH AT	69	66.	12.58	9.	2.	1.	.09
+	2 COMBINED AT	C69	1000.	14.58	765.	433.	148.	3.18
+	ROUTED TO	69T71	979.	15.25	763.	433.	148.	3.18
+	HYDROGRAPH AT	71	410.	13.42	107.	27.	9.	1.09
+	3 COMBINED AT	CP71	1857.	15.33	1186.	558.	191.	8.82
+	ROUTED TO	71T72	1746.	16.17	1184.	558.	191.	8.82
+	2 COMBINED AT	EMFWAR	3071.	13.75	2146.	869.	310.	25.63
+	ROUTED TO	WARTKN	3023.	14.00	2137.	869.	310.	25.63
+	HYDROGRAPH AT	CAP1A	217.	2.00	217.	217.	217.	.01
+	ROUTED TO	RCA1A	217.	3.67	217.	217.	217.	.01
+	HYDROGRAPH AT	CAP1B	217.	2.00	217.	217.	217.	.01
+	ROUTED TO	RCAP1B	217.	3.50	217.	217.	217.	.01
+	HYDROGRAPH AT	65AW	485.	12.25	46.	11.	4.	.43
+	3 COMBINED AT	C65AW	919.	12.25	480.	445.	438.	.45
+	ROUTED TO	65AWTB	503.	16.25	476.	445.	438.	.45
	HYDROGRAPH AT							

+	65A	1298.	13.00	257.	65.	22.	2.54
ROUTED TO +	65ATB	1036.	13.67	257.	65.	22.	2.54
HYDROGRAPH AT +	65B	637.	13.33	160.	40.	13.	1.37
3 COMBINED AT +	CP65B	1928.	13.58	873.	547.	472.	4.36
ROUTED TO +	65T66	1888.	13.75	872.	547.	472.	4.36
HYDROGRAPH AT +	66A	284.	12.33	32.	8.	3.	.26
ROUTED TO +	66ATB	241.	12.75	32.	8.	3.	.26
HYDROGRAPH AT +	66B	336.	13.08	72.	18.	6.	.67
2 COMBINED AT +	CP66B	498.	13.00	104.	26.	9.	.93
ROUTED TO +	66BTC	354.	14.08	104.	26.	9.	.93
HYDROGRAPH AT +	66C	327.	12.75	56.	14.	5.	.50
2 COMBINED AT +	CP66C	489.	12.83	159.	40.	13.	1.43
ROUTED TO +	66CTD	426.	13.42	159.	40.	13.	1.43
HYDROGRAPH AT +	66D	223.	12.83	40.	10.	3.	.31
2 COMBINED AT +	C66D	550.	12.92	197.	50.	17.	1.74
2 COMBINED AT +	CP66	2268.	13.75	1050.	592.	487.	6.10
ROUTED TO +	66DT70	2186.	14.17	1049.	592.	487.	6.10
HYDROGRAPH AT +	70A	444.	12.67	69.	17.	6.	.54
2 COMBINED AT +	C70A	2186.	14.17	1108.	608.	492.	6.64
ROUTED TO +	70ATB	2118.	14.75	1106.	607.	492.	6.64
HYDROGRAPH AT +	70B	279.	12.83	55.	14.	5.	.38
2 COMBINED AT +	CP70B	2117.	14.75	1150.	619.	496.	7.02
ROUTED TO +	70BT76	2070.	15.25	1146.	619.	495.	7.02
HYDROGRAPH AT +	76B	416.	13.17	104.	26.	9.	.64

+	2 COMBINED AT	CP76B	2074.	15.25	1226.	641.	502.	7.66
+	HYDROGRAPH AT	72	427.	13.08	96.	24.	8.	.84
+	2 COMBINED AT	KNOX	2074.	15.25	1305.	661.	509.	8.50
+	2 COMBINED AT	EMFKNX	4699.	14.00	3271.	1498.	805.	34.13
+	ROUTED TO	KNXTRY	4642.	14.17	3264.	1498.	805.	34.13
+	HYDROGRAPH AT	76A	807.	14.00	303.	77.	26.	1.91
+	2 COMBINED AT	EMFRAY	5303.	14.08	3477.	1560.	826.	36.04
+	HYDROGRAPH AT	73A	378.	13.33	96.	24.	8.	.95
+	ROUTED TO	73ATB	306.	13.83	96.	24.	8.	.95
+	HYDROGRAPH AT	73B	376.	12.50	47.	12.	4.	.42
+	2 COMBINED AT	CP73B	421.	12.50	142.	35.	12.	1.37
+	ROUTED TO	73BTC	300.	13.25	142.	35.	12.	1.37
+	HYDROGRAPH AT	73C	595.	12.33	65.	16.	5.	.58
+	2 COMBINED AT	CP73C	718.	12.42	204.	51.	17.	1.95
+	ROUTED TO	73T74C	634.	12.67	203.	51.	17.	1.95
+	HYDROGRAPH AT	74A	306.	13.33	77.	19.	6.	.75
+	ROUTED TO	74ATB	240.	13.92	76.	19.	6.	.75
+	HYDROGRAPH AT	74B	286.	12.50				
+	2 COMBINED AT	CP74B	331.	12.58				
+	ROUTED TO	74BTC	298.	12.83				
+	HYDROGRAPH AT	74C	307.	12.58				
+	3 COMBINED AT	CP74C	1203.	12.67				
+	ROUTED TO	74CT75	1100.	12.92				
+	HYDROGRAPH AT	75	1047.	14.75				

THE Q FOR SUB-BASIN 75 DOES NOT INCLUDE THE RATIO VALUE 0.25 DISCUSSED ON PAGE 20 OF THIS REPORT. THEREFORE, THIS Q SHOULD NOT BE USED AS THE EXISTING CONDITIONS Q.

CWR 8/06

+	2 COMBINED AT	CP75	1444.	14.75	798.	208.	69.	7.38
+	ROUTED TO	75TCP	1271.	15.25	798.	208.	69.	7.38
+	HYDROGRAPH AT	77A	556.	13.75	174.	43.	14.	1.74
+	ROUTED TO	77ATB	474.	14.17	173.	43.	14.	1.74
+	HYDROGRAPH AT	77B	380.	12.33	42.	11.	4.	.36
+	2 COMBINED AT	CP77B	474.	14.17	213.	54.	18.	2.10
+	ROUTED TO	77BTC	465.	14.50	211.	54.	18.	2.10
+	HYDROGRAPH AT	77C	295.	12.42	33.	8.	3.	.28
+	2 COMBINED AT	C77C	506.	12.67	241.	62.	21.	2.38
+	ROUTED TO	77CT78	484.	12.83	241.	62.	21.	2.38
+	HYDROGRAPH AT	78A	594.	14.17	224.	57.	19.	2.29
+	ROUTED TO	78ATB	498.	14.83	223.	57.	19.	2.29
+	HYDROGRAPH AT	78B	625.	12.17	68.	19.	6.	.39
+	2 COMBINED AT	C78B	624.	12.17	284.	75.	25.	2.68
+	ROUTED TO	78BTC	511.	12.50	284.	75.	25.	2.68
+	HYDROGRAPH AT	78C	402.	12.33	60.	15.	5.	.28
+	2 COMBINED AT	C78C	873.	12.42	338.	89.	30.	2.96
+	2 COMBINED AT	C78C2	1112.	12.42	566.	148.	49.	5.34
+	ROUTED TO	78CT79	1049.	12.75	564.	148.	49.	5.34
+	HYDROGRAPH AT	79A	944.	13.50	280.	70.	23.	2.01
+	2 COMBINED AT	C79A1	1516.	13.50	815.	211.	70.	7.35
+	HYDROGRAPH AT	78F	1114.	14.17	412.	105.	35.	4.29
+	ROUTED TO	78FTD	1014.	14.67	410.	105.	35.	4.29
	HYDROGRAPH AT							

+	78D	705.	12.83	131.	33.	11.	.89
2 COMBINED AT +	C78D	1021.	14.67	527.	135.	45.	5.18
HYDROGRAPH AT +	82A4	500.	13.67	210.	54.	18.	2.13
ROUTED TO +	R82A4	495.	14.00	209.	54.	18.	2.13
HYDROGRAPH AT +	82A3	416.	13.92	194.	50.	17.	2.02
2 COMBINED AT +	C82A3	893.	13.92	395.	102.	34.	4.15
ROUTED TO +	RC82A3	890.	14.17	395.	102.	34.	4.15
HYDROGRAPH AT +	CAP2	64.	20.00	64.	64.	62.	.01
ROUTED TO +	RCAP2	64.	23.33	64.	64.	61.	.01
HYDROGRAPH AT +	82A2	654.	14.42	370.	101.	34.	4.13
2 COMBINED AT +	C82A2	685.	14.50	405.	155.	94.	4.14
HYDROGRAPH AT +	82A1	888.	13.33	305.	77.	26.	3.12
3 COMBINED AT +	C82A	2004.	13.83	1019.	313.	147.	11.41
ROUTED TO +	82ATD	1975.	14.17	1017.	313.	147.	11.41
2 COMBINED AT +	C78D2	2782.	14.33	1465.	429.	185.	16.59
ROUTED TO +	78DTE	2753.	14.83	1461.	429.	185.	16.59
HYDROGRAPH AT +	78E	838.	12.75	158.	40.	13.	1.01
2 COMBINED AT +	C78E	2753.	14.83	1575.	462.	196.	17.60
ROUTED TO +	78T79B	2741.	15.00	1570.	461.	196.	17.60
HYDROGRAPH AT +	79B	674.	13.08	161.	40.	13.	1.00
2 COMBINED AT +	C79B	2755.	15.00	1694.	494.	207.	18.60
2 COMBINED AT +	C79	3657.	14.83	2395.	675.	268.	25.95
ROUTED TO +	79TCP	3651.	15.00	2383.	674.	267.	25.95
2 COMBINED AT +	CPPWR	4713.	15.08	3041.	845.	324.	33.33

+	ROUTED TO	CPT80A	4703.	15.25	3026.	844.	323.	33.33
+	HYDROGRAPH AT	80A	2040.	13.00	574.	178.	60.	2.64
+	2 COMBINED AT	CPOWER	5570.	13.42	3422.	977.	368.	35.97
+	2 COMBINED AT	EMFPOW	9673.	14.00	6467.	2429.	1159.	72.01
+	ROUTED TO	POWTWI	9646.	14.08	6461.	2429.	1159.	72.01
+	HYDROGRAPH AT	80B	1139.	12.58	212.	66.	22.	1.12
+	2 COMBINED AT	MFWIL	9695.	14.08	6540.	2474.	1174.	73.13
+	ROUTED TO	WILTSP	9655.	14.33	6532.	2474.	1174.	73.13
+	HYDROGRAPH AT	82B	1307.	12.17	93.	23.	8.	.92
+	DIVERSION TO	TRW	1307.	12.17	93.	23.	8.	.92
+	HYDROGRAPH AT	DTTRW	0.	.00	0.	0.	0.	.92
+	ROUTED TO	82BT83	0.	.00	0.	0.	0.	.92
+	HYDROGRAPH AT	83	390.	13.17	90.	23.	8.	1.01
+	2 COMBINED AT	C83	382.	13.17	88.	22.	7.	1.93
+	ROUTED TO	83T84	283.	14.08	87.	22.	7.	1.93
+	HYDROGRAPH AT	84	344.	13.25	82.	20.	7.	.99
+	2 COMBINED AT	C84	434.	13.92	164.	42.	14.	2.92
+	ROUTED TO	84T85	430.	14.08	163.	42.	14.	2.92
+	HYDROGRAPH AT	85	329.	13.25	74.	19.	6.	1.00
+	2 COMBINED AT	C85	602.	13.50	231.	59.	20.	3.92
+	ROUTED TO	85T86	596.	13.75	230.	59.	20.	3.92
+	HYDROGRAPH AT	86	346.	13.25	79.	20.	7.	1.00
+	2 COMBINED AT	C86	806.	13.58	301.	77.	26.	4.92
+	ROUTED TO	86T91	700.	14.83	300.	77.	26.	4.92

+	HYDROGRAPH AT 87A	259.	12.83	43.	11.	4.	.49
+	ROUTED TO 87ATB	195.	13.25	43.	11.	4.	.49
+	HYDROGRAPH AT 87B	240.	12.92	43.	11.	4.	.49
+	2 COMBINED AT C87	379.	13.00	86.	21.	7.	.98
+	ROUTED TO 87T88B	311.	13.92	85.	21.	7.	.98
+	HYDROGRAPH AT 88A	318.	12.58	44.	11.	4.	.50
+	ROUTED TO 88ATB	262.	13.00	44.	11.	4.	.50
+	HYDROGRAPH AT 88B	243.	12.92	44.	11.	4.	.50
+	2 COMBINED AT C88B	504.	12.92	87.	22.	7.	1.00
+	2 COMBINED AT C88	670.	12.92	168.	42.	14.	1.98
+	ROUTED TO 88T89	562.	13.83	168.	42.	14.	1.98
+	HYDROGRAPH AT 89A	216.	12.92	40.	10.	3.	.50
+	ROUTED TO 89ATB	154.	13.58	40.	10.	3.	.50
+	HYDROGRAPH AT 89B	253.	12.83	42.	10.	3.	.50
+	2 COMBINED AT C89B	276.	12.83	81.	20.	7.	1.00
+	2 COMBINED AT C89	727.	13.75	244.	61.	20.	2.98
+	ROUTED TO 89T90	670.	14.92	243.	61.	20.	2.98
+	HYDROGRAPH AT 90A	373.	12.42	39.	10.	3.	.48
+	ROUTED TO 90ATB	166.	13.50	39.	10.	3.	.48
+	HYDROGRAPH AT 90B	378.	13.17	86.	22.	7.	.82
+	2 COMBINED AT C90B	477.	13.25	124.	32.	11.	1.30
+	2 COMBINED AT C90	821.	13.50	357.	91.	31.	4.28
+	ROUTED TO 90T91	817.	13.67	356.	91.	31.	4.28
	HYDROGRAPH AT						

```
+                          91       245.   12.92        48.        12.        4.       .46

        3 COMBINED AT
+                        CP91      1434.   13.67       653.       169.       56.      9.66

        ROUTED TO
+                         R91      1431.   13.75       652.       169.       56.      9.66

        HYDROGRAPH AT
+                         81A      1515.   12.75       344.       113.       38.      1.81

        ROUTED TO
+                       81ATB      1401.   13.08       344.       112.       38.      1.81

        HYDROGRAPH AT
+                         81B       660.   12.67       116.        34.       11.       .84

        3 COMBINED AT
+                      RITTEN      2438.   13.33      1056.       302.      101.     12.31

        2 COMBINED AT
+                      EMFRIT     11046.   14.25      7295.      2701.     1251.     85.44


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


   -----DSS---ZCLOSE Unit:  71,   File: SEMP100N.DSS
             Pointer Utilization:    .25
             Number of Records:      25
             File Size:      53.2  Kbytes
             Percent Inactive:     .0
```

APPENDIX E

100-YEAR, 24-HOUR
FUTURE CONDITION MODEL
HEC-1 OUTPUT

APPENDIX E

HEC-1 OUTPUT E-1 Northeast Mesa Area, 100-year, 24-hour Storm Future Land Use Condition **E-1**

HEC-1 OUTPUT E-2 Northwest Mesa Area, 100-year, 24-hour Storm, Future Land Use Conditions **E-54**

HEC-1 OUTPUT E-3 Southern Mesa Area, 100-year, 24-hour Storm, Future Land Use Conditions **E-104**

APPENDIX E-1

NORTHEAST MESA AREA
100-YEAR, 24-HOUR STORM
FUTURE LAND USE CONDITIONS
HEC-1 MODEL

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   25JUN98  TIME  13:47:03  *
 *                                      *
 ****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
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

1 HEC-1 INPUT

PAGE 1

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

   1          ID   FUTURE LAND USE WITH RETENTION AND EXISTING ROUTING
   2          ID   ASSUMING 80% RETENTION EFFECTIVENESS
   3          ID
   4          ID   SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
   5          ID   AREA NORTH OF SUPERSTITION FREEWAY
   6          ID
   7          ID
   8          ID   REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
   9          ID   TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS
  10          ID
  11          ID   FILENAME:  FUTN.DAT
  12          ID
  13          ID   THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
  14          ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.
  15          ID
  16          ID   100-YEAR 24-HOUR FREQUENCY
  17          ID
  18          ID
  19          ID   METHODOLOGY
  20          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
  21          ID   SCS TYPE II RAINFALL DISTRIBUTION
  22          ID   S-GRAPH HYDROGRAPH
  23          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
  24          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
  25          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
  26          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
  27          ID   DATED 1994
  28          ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
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 29          ID
 30          ID   INITIAL STUDY PERFORMED BY LISA C. YOUNG
 31          ID   REVIEWED BY VALERIE A. SWICK
 32          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
 33          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
 34          ID
 35          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
 36          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
 37          ID
 38          ID
 39          ID    LAST UPDATED ON 3/13/98
 40          ID
 41          ID    UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE FAMILY HOUSING
 42          ID
 43          ID   DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN
             *DIAGRAM
 44          IT       5  1APR97    0000    1000
 45          IO       5
 46          IN      15
 47          JD    3.60     .01
 48          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 49          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 50          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 51          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 52          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 53          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 54          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
1                                            HEC-1 INPUT
PAGE  2

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

 55          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 56          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 57          PC    .983    .986    .989    .992    .995    .998   1.000
 58          JD    3.58     1.0
 59          JD    3.49     5.0
 60          JD    3.38    10.0
 61          JD    3.24    30.0
 62          JD    3.10    60.0
 63          JD    3.05    90.0
             *
             * DDM   ***** Updated *****

 64          KK      42
 65          KM   BASIN 42
 66          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 67          KM    L=      3.1  Lca=      1.5   S=   60.9  Kn= .046  LAG=  55.2
 68          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 69          BA    1.75
 70          LG     .24     .25    5.00     .31   31.00
 71          UI    107.    107.    219.    392.    505.    582.    656.    758.    877.   1143.
 72          UI   1368.   1145.    967.    854.    736.    640.    544.    461.    335.    208.
 73          UI    183.    175.    117.    107.     83.     33.     33.     33.     33.     33.
 74          UI     33.     33.      0.      0.      0.      0.      0.      0.      0.      0.
 75          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

 76          KK   RET42
 77          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 78          DT     D42      54
 79          DI       0   10000
 80          DQ       0   10000
             *
             * DDM   ***** Preserved *****

 81          KK   42T51
 82          RS      10    FLOW      -1
 83          RC    0.08   0.055    0.08    7000   0.011
 84          RX       0     600     700     710     720     730     830    1630
 85          RY      10       5       3       0       0       3       5      10
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                    *
                    * DDM   ***** Updated *****

 86                 KK      51
 87                 KM   BASIN 51
 88                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 89                 KM    L=       1.5  Lca=        .8   S=   54.4  Kn= .042  LAG=  29.4
 90                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 91                 BA    1.24
 92                 LG     .21      .25     4.60      .41   47.00
 93                 UI    142.     372.     690.     888.   1187.   1735.   1362.   1051.    796.    556.
 94                 UI    284.     215.     142.      58.     44.     44.     44.      0.      0.      0.
 95                 UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                    *
1                                                HEC-1 INPUT
PAGE  3

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


 96                 KK   RET51
 97                 KM   RETAIN THE 100-YR, 2-HR VOLUME,
 98                 DT     D51      50
 99                 DI       0   10000
100                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

101                 KK     C51
102                 KM   COMBINE FLOWS FROM 42 AND 51
103                 HC       2
                    *
                    * DDM   ***** Preserved *****

104                 KK   51T53
105                 KM    ROUTE 51 TO 53
106                 RS       9    FLOW      -1
107                 RC    0.08   0.055    0.08    8000    0.01
108                 RX       0     100     200     210     220     230     330     430
109                 RY       7       6       5       0       0       5       6       7
                    *
                    * DDM   ***** Updated *****

110                 KK     44A
111                 KM   BASIN 44A
112                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
113                 KM    L=       2.8  Lca=       1.4   S=   54.5  Kn= .052  LAG=  52.6
114                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
115                 BA    1.59
116                 LG     .24      .25     4.50      .42   30.00
117                 UI    102.     102.     237.     399.    499.    575.    655.    763.    926.   1239.
118                 UI   1220.     990.     855.     745.    635.    542.    461.    335.    210.    176.
119                 UI    168.     109.     102.      68.     31.     31.     31.     31.     31.     31.
120                 UI     31.       0.       0.       0.      0.      0.      0.      0.      0.      0.
121                 UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                    *

122                 KK  RET44A
123                 KM   RETAIN THE 100-YR, 2-HR VOLUME,
124                 DT    D44A      48
125                 DI       0   10000
126                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

127                 KK  DIV44A
128                 KM   DIVERT 80% OF THE LOW FLOWS WEST AND SOUTH TO 44B, 70% OF HIGH FLOWS
129                 DT    D44A
130                 DI       0     500    1000    3000
131                 DQ       0     400     750    2100
                    * DDM   ***** Updated *****
```

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

 132          KK      43
 133          KM   BASIN 43
 134          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 135          KM    L=      1.9  Lca=       .9   S=   58.2  Kn= .041  LAG=  33.9
 136          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 137          BA    1.42
 138          LG     .19     .25    4.70     .40   49.00
 139          UI    142.    284.    610.    790.    981.   1325.   1738.   1348.   1081.    850.
 140          UI    659.    402.    244.    196.    142.     59.     43.     43.     43.     43.
 141          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 142          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 143          KK   RET43
 144          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 145          DT     D43      62
 146          DI       0   10000
 147          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 148          KK     C43
 149          KM     COMBINE 43 WITH DIVERTED FLOWS FROM 45A
 150          HC       2
              *
              * DDM   ***** Preserved *****

 151          KK   43T53
 152          RS      12    FLOW      -1
 153          RC    0.08   0.055    0.08   11250   0.009
 154          RX       0     200     300     310     315     325     335     535
 155          RY       6       3       2       0       0       2       3       6
              *
              * DDM   ***** Updated *****

 156          KK      53
 157          KM   BASIN 53
 158          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 159          KM    L=      1.9  Lca=       .9   S=   63.5  Kn= .046  LAG=  37.4
 160          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 161          BA     .78
 162          LG     .23     .25    5.20     .31   36.00
 163          UI     71.    116.    278.    367.    443.    547.    777.    836.    639.    527.
 164          UI    422.    338.    228.    124.    116.     71.     57.     22.     22.     22.
 165          UI     22.     22.      0.      0.      0.      0.      0.      0.      0.      0.
 166          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 167          KK   RET53
 168          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 169          DT     D53      27
 170          DI       0   10000
 171          DQ       0   10000
              *
              * DDM   ***** Preserved *****
```



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

 172          KK     C53
 173          KM     COMBINE 53, 43 AND 51
 174          HC       3
              *
```

```
                    * DDM    ***** Updated *****

175                 KK       54
176                 KM    BASIN 54
177                 KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
178                 KM     L=       1.5  Lca=        .8    S=    42.8  Kn= .059  LAG=  38.7
179                 KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
180                 BA      .49
181                 LG      .25      .25     5.40      .27   31.00
182                 UI      42.      64.     162.     216.    258.     316.     429.     526.     410.     337.
183                 UI     274.     222.     167.      96.     72.      57.      42.      22.      13.      13.
184                 UI      13.      13.      13.       0.      0.       0.       0.       0.       0.       0.
185                 UI       0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
                    *

186                 KK    RET54
187                 KM    RETAIN THE 100-YR, 2-HR VOLUME,
188                 DT      D54      11
189                 DI        0   10000
190                 DQ        0   10000
                    *
                    * DDM    ***** Preserved *****

191                 KK      C54
192                 KM    COMBINE 53 AND 54
193                 HC        2
                    *
                    * DDM    ***** Preserved *****

194                 KK   DCAP12
195                 KM    FLOWS SPLIT AT CAP AND SOUTHERN AVE, RATING CURVES BASED ON THREE 5X7 CBCs
196                 KM    PART OF THE FLOW GOES SOUTH ACRSS SOUTHERN TO CAP 13 +14
197                 DT    SOUTH
198                 DI        0      450     1000     2500
199                 DQ        0        0      275     1025
                    *
                    * DDM    ***** Preserved *****

200                 KK    CAP12
201                 RS        1     FLOW       -1
202                 SV        0    0.238     2.72    13.37    36.82
203                 SE   1563.6     1564     1566     1568     1570
204                 SQ        0       30      188      574     1098
                    *
                    * DDM    ***** Preserved *****
1                                                   HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


205                 KK    DR44A
206                 KM    RETRIEVE DIVERTED FLOWS FROM 44A
207                 DR     D44A
                    *
                    * DDM    ***** Preserved *****

208                 KK    44ATB
209                 KM    ROUTE 44A TO 44B, STREET AND SHEET FLOW THROUGH NEIGHBORHOODS
210                 KM    NO CURB AND GUTTER
211                 RS       15     FLOW       -1
212                 RC    0.055    0.045    0.055     9000    0.008
213                 RX        0      500     1010   1012.5   1022.5   1027.5   1532.5   2037.5
214                 RY        6      5.5        3        0        0        3      5.5        6
                    *
                    * DDM    ***** Updated *****

215                 KK      44B
216                 KM    BASIN 44B
217                 KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
218                 KM     L=       1.1  Lca=        .9    S=    64.8  Kn= .056  LAG=  32.0
```

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219          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
220          BA    1.06
221          LG     .23      .19     6.60      .17    39.00
222          UI    111.     250.     501.     647.     818.    1189.    1279.     956.     753.     582.
223          UI    401.     209.     171.     111.      58.      34.      34.      34.      34.       0.
224          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
225          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

226          KK  RET44B
227          KM   RETAIN THE 100-YR, 2-HR VOLUME,
228          DT    D44B      24
229          DI       0   10000
230          DQ       0   10000
             *
             * DDM   ***** Preserved *****

231          KK    C44B
232          KM   COMBINE 44A WITH 44B
233          HC       2
             *
             * DDM   ***** Preserved *****

234          KK  CAP10+
235          KM   COMBINED CAP 10 AND 11, SAME CONTRIBUTING AREA AND HYDRAULICALLY CONNECTED
236          KM   STORAGE AND DISCHARGES WERE ADDED AT THE APPROPRIATE ELEVATIONS
237          RS       1    FLOW      -1
238          SV       0    0.43   3.397  11.626   66.53
239          SE  1562.4    1564    1566    1568    1570
240          SQ       0     180     736    1684    2754
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE   7

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

241          KK  RCAP11
242          KM   ROUTE FLOWS FROM CAP OVERCHUTE #10 AND 11 TO ADOT WEST BASIN
243          RK    2400  0.0003   0.013            TRAP      20       3
             *
             * DDM   ***** Preserved *****

244          KK     C12
245          KM   COMBINE ROUTED FLOWS FROM CAP #10 AND 11 WITH CAP #12
246          HC       2
             *
             * DDM   ***** Preserved *****

247          KK  ADOT-W
248          KM   WEST ADOT DETENTION BASIN 4189, WEST OF CAP AND NORTH OF SUPERSITION FREEWAY
249          KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
250          KM        COUNTY
251          KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
252          KM            A-N WEST, INC., FEBRUARY, 1987.
253          RS       1    ELEV      36
254          SV       0   12.35    63.5   210.3   367.5   535.1  667.85  713.55
255          SE      36      38      40      44      48      52      55      56
256          SL    36.0   28.27      .6      .5
257          SS      55     200     2.6     1.5
             *
             * DDM   ***** Preserved *****

258          KK  RADOTW
259          KM   ROUTE FLOWS IN CONCRETE CHANNEL TO CULVERTS UNDER SUPERSTITION FREEWAY
260          RS       2    FLOW      -1
261          RC    .035   0.012    .035    4500   .0033
262          RX       0     500    1000    1012    1020    1032    1532    2032
263          RY      13    12.5      12       0       0      12    12.5      13
             *
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                    * DDM   ***** Updated *****

 264                KK     36B
 265                KM   BASIN 36B
 266                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 267                KM    L=      1.0  Lca=       .5   S=   45.0  Kn= .087  LAG=  43.5
 268                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 269                BA     .32
 270                LG     .17     .15    7.30     .17   22.00
 271                UI     25.     25.     86.    114.    137.    161.    194.    264.    305.    239.
 272                UI    201.    168.    139.    114.     80.     46.     41.     32.     25.     15.
 273                UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
 274                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

 275                KK  RET36B
 276                KM   RETAIN THE 100-YR, 2-HR VOLUME,
 277                DT    D36B      20
 278                DI       0   10000
 279                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 280                KK    C36B
 281                KM   COMBINE FLOWS FROM ADOT BASIN W WITH SUB36
 282                HC       2
 283                ZW     A=ADOT WEST BASIN  B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
                    *
                    * DDM   ***** Preserved *****

 284                KK  RSOUTH
 285                KM   RETRIEVE FLOWS CROSSING SOUTHERN AT CAP
 286                DR   SOUTH
                    *
                    * DDM   ***** Updated *****

 287                KK      57
 288                KM   BASIN 57
 289                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 290                KM    L=       .3  Lca=       .1   S=   35.7  Kn= .090  LAG=   6.2
 291                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 292                BA     .18
 293                LG     .15     .23    5.40     .27   58.00
 294                UI    418.    802.    137.      0.      0.      0.      0.      0.      0.      0.
 295                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *

 296                KK   RET57
 297                KM   RETAIN THE 100-YR, 2-HR VOLUME,
 298                DT     D57      15
 299                DI       0   10000
 300                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

 301                KK     C57
 302                KM   COMBINE FLOWS CROSSING SOUTHERN AT CAP WITH THOSE OF SUBBASIN 57
 303                HC       2
                    *
                    * DDM   ***** Preserved *****

 304                KK  CAP13+
 305                KM    CAP OVERCHUTES 13 AND 14 WERE COMBINED SINCE THY HAVE COMMON DRAINAGE
 306                KM    STORAGE AND DISCHARGES WERE ADDED AT SPECIFIED ELEVATIONS
 307                RS       1    FLOW      -1
 308                SV       0   1.198   2.601   5.746
```

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309          SE    1564    1567    1568    1570
310          SQ       0     180     500    1143
             *
             * DDM   ***** Updated *****

311          KK     36A
312          KM   BASIN 36A
313          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
314          KM    L=        .3  Lca=        .2   S=   44.1  Kn= .100  LAG=  23.7
315          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
316          BA     .10
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

317          LG     .16     .24    6.00     .27   28.00
318          UI     14.     50.     78.    109.    164.    121.     87.     59.     28.     18.
319          UI     10.      4.      4.      4.      0.      0.      0.      0.      0.      0.
320          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

321          KK  RET36A
322          KM   RETAIN THE 100-YR, 2-HR VOLUME,
323          DT    D36A       5
324          DI       0   10000
325          DQ       0   10000
             *
             * DDM   ***** Preserved *****

326          KK    C36A
327          KM   COMBINE FLOWS FROM CAP OVERCHUTES INTO ADOT EAST DETENTION BASIN
328          HC       2
             *
             * DDM   ***** Preserved *****

329          KK  ADOT-E
330          KM   EAST ADOT DETENTION BASIN 4105, WEST OF CAP AND NORTH OF SUPERSTITION
331          KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
332          KM        COUNTY
333          KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
334          KM            A-N WEST, INC., FEBRUARY, 1987.
335          RS       1    ELEV    49.5
336          SV       0     300     340
337          SE    49.5      60      61
338          SL    49.5   28.27      .6      .5
339          SS      60     200     2.6     1.5
340          ZW    A=ADOT EAST BASIN B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
             *
             * DDM   ***** Preserved *****

341          KK   CFAKE
342          KM   THIS IS JUST A FAKE CONCENTRATION POINT TO ELIMINATE THE ERROR THAT SAYS TO
343          KM   "COMBINE HYDROGRAPHS MORE OFTEN".
344          HC       2
             *
             * DDM   ***** Updated *****

345          KK      52
346          KM   BASIN 52
347          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
348          KM    L=       1.6  Lca=        .7   S=   54.9  Kn= .041  LAG=  36.2
349          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
350          BA     .43
351          LG     .20     .19    6.60     .18   45.00
352          UI     40.     71.    163.    215.    261.    328.    479.    441.    345.    280.
353          UI    223.    173.     97.     69.     54.     40.     18.     12.     12.     12.
354          UI     12.      0.      0.      0.      0.      0.      0.      0.      0.      0.
355          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
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HEC-1 INPUT

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

 356          KK   RET52
 357          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 358          DT     D52      26
 359          DI       0   10000
 360          DQ       0   10000
              *
              * DDM   ***** Updated *****

 361          KK      56
 362          KM   BASIN 56
 363          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 364          KM    L=       .9  Lca=       .5   S=   57.9  Kn= .036  LAG=  32.9
 365          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 366          BA     .55
 367          LG     .18     .15    7.30     .14   54.00
 368          UI     56.    119.    247.    320.    400.    557.    677.    505.    402.    313.
 369          UI    233.    125.     94.     63.     45.     17.     17.     17.     17.      0.
 370          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 371          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 372          KK   RET56
 373          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 374          DT     D56      25
 375          DI       0   10000
 376          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 377          KK     C56
 378          KM     COMBINE 52 AND 56 BEHIND THE STOCK POND
 379          KM     ASSUMING STOCK POND IS EFFECTIVE, DIVERTS FLOWS SOUTH ACROSS SUPERSTITION
 380          KM     STORAGE ROUTING WAS NOT PERFORMED, CHANNEL/PIPE CROSSING
 381          HC       2
              *
              * DDM   ***** Preserved *****

 382          KK   56T58
 383          RS       3    FLOW      -1
 384          RC    0.08   0.055    0.08    2500   0.004
 385          RX       0     200     300     310     320     330     430     530
 386          RY       6       4       3       0       0       3       4       6
              *
              * DDM   ***** Updated *****

 387          KK      58
 388          KM   BASIN 58
 389          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 390          KM    L=      1.1  Lca=       .5   S=   50.4  Kn= .083  LAG=  28.3
 391          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 392          BA     .95
 393          LG     .12     .24    5.60     .29   56.00
 394          UI    113.    312.    565.    731.   1020.   1359.   1008.    771.    577.    346.
 395          UI    194.    139.     86.     35.     35.     35.      0.      0.      0.      0.
```


HEC-1 INPUT

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

 396          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 397          KK   RET58
 398          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 399          DT     D58      73
```

```
400          DI        0   10000
401          DQ        0   10000
             *
             * DDM   ***** Preserved *****

402          KK      C58
403          KM   COMBINE 58 WITH 56
404          KM   THE VOLUME AT THIS CONCENTRATION POINT WILL BE SPLIT BETWEEN THE OVERCHUTES
405          KM   CAP1A AND CAP1B. THIS WILL BE MODELED AS FLAT TOP HYDROGRAPHS WITH 217 CFS
406          KM   VALUES FOR UI CARDS AT THESE OVERCHUTES
407          KM   NO DATA AVAILABLE ON CAP OVERCHUTE SIZING
408          ZW     A=CONCENTRATION POINT C58  B=FLOW TO OVERCHUTES  C=FLOW  F=OBSERVED
409          HC       2
             *
             * DDM   ***** Updated *****

410          KK      46B
411          KM   BASIN 46B
412          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
413          KM    L=      1.4  Lca=       .7   S=   42.9  Kn= .073  LAG=  32.9
414          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
415          BA     .36
416          LG     .21      .24     4.00      .56   51.00
417          UI     37.      78.     161.     209.    262.    364.    443.    330.    263.    205.
418          UI    153.      82.      61.      41.     29.     11.     11.     11.     11.      0.
419          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
420          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
             *

421          KK  RET46B
422          KM   RETAIN THE 100-YR, 2-HR VOLUME,
423          DT    D46B       5
424          DI       0   10000
425          DQ       0   10000
             *
             * DDM   ***** Preserved *****

426          KK    CAP6
427          RS       1    FLOW      -1
428          SV       0   0.236   1.627   8.021
429          SE  1556.2    1558    1560    1562
430          SQ       0      52     180     350
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

431          KK   RCAP6
432          KM   ROUTE THE FLOWS FROM CAP OVERCHUTE #6 TO CRISMON ROAD (NATURAL WASH)
433          RS       1    FLOW      -1
434          RC    .045    .022    .045    1600    .002
435          RX     100     200     300     324     325     331     431     531
436          RY       6       5       4       0       0       4       5       6
             *
             * DDM   ***** Preserved *****

437          KK  RCAP6B
438          KM   ROUTE CONCENTRATION POINT CAP#6 TO SUBBASIN 29A (CRISMON CHANNEL)
439          RS       1    FLOW      -1
440          RC    .045    .013    .045    1500    .018
441          RX     100     200     300     303     318     321     421     521
442          RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Updated *****

443          KK      29A
444          KM   BASIN 29A
445          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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```
446          KM    L=        .9  Lca=       .4   S=   41.2  Kn= .107  LAG=  24.5
447          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
448          BA     .18
449          LG     .21      .24    4.00     .58   29.00
450          UI     25.      86.    138.    188.    293.    232.    170.    120.     61.     39.
451          UI     24.       8.      8.      8.      0.      0.      0.      0.      0.      0.
452          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

453          KK  RET29A
454          KM   RETAIN THE 100-YR, 2-HR VOLUME,
455          DT    D29A       9
456          DI       0   10000
457          DQ       0   10000
             *
             * DDM   ***** Preserved *****

458          KK    C29A
459          HC       2
             *
             * DDM   ***** Preserved *****

460          KK   29A-S
461          KM   DIVERT FLOWS INTO SUBBASIN 30 THAT OVERTOP THE CRISMON CHANNEL
462          DT   29A-W
463          DI       0     500    1000    5000
464          DQ       0       0     500    4500
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

465          KK   29ATB
466          KM   ROUTE CONCENTRATION POINT 29A TO SUBBASIN 29B
467          RS       1    FLOW      -1
468          RC     .03      .02     .03    1000     .018
469          RX     100      200     300     303     318     321     421     521
470          RY     6.5      5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Updated *****

471          KK     45A
472          KM   BASIN 45A
473          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
474          KM    L=       2.0  Lca=      1.0   S=   70.4  Kn= .079  LAG=  51.0
475          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
476          BA     .62
477          LG     .21      .25    4.00     .60   19.00
478          UI     41.      41.    102.    165.    203.    234.    269.    316.    404.    515.
479          UI    450.     373.    326.    276.    237.    201.    161.    104.     72.     67.
480          UI     53.      41.     35.     12.     12.     12.     12.     12.     12.     12.
481          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
482          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

483          KK  RET45A
484          KM   RETAIN THE 100-YR, 2-HR VOLUME,
485          DT    D45A      24
486          DI       0   10000
487          DQ       0   10000
             *
             * DDM   ***** Preserved *****

488          KK    D45A
489          KM    DIVERT 75% OF THE FLOW SOUTH,THE REMAINDER ALONG UNIVERSITY TO NEXT SUBBASIN
490          KM    CHANNEL ALONG UNIVERSITY, SOME SHEET FLOW IS DIVERTED
491          DT   45ATB
492          DI       0    5000
```

```
493          DQ       0    4750
             *
             *
             * DDM    ***** Updated *****

494          KK     55B
495          KM   BASIN 55B
496          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
497          KM    L=       3.5  Lca=       1.8   S=   48.6  Kn= .058  LAG=  72.7
498          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
499          BA    1.86
500          LG     .23      .25     4.10      .57   31.00
501          UI     86.      86.      86.     215.    313.     382.     436.     481.     525.     586.
502          UI    656.     741.     940.    1094.   1027.     878.     779.     707.     644.     567.
503          UI    511.     452.     409.     344.    254.     175.     152.     143.     142.      95.
504          UI     86.      86.      57.      26.     26.      26.      26.      26.      26.      26.
505          UI     26.      26.      26.       0.      0.       0.       0.       0.       0.       0.
506          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
1                                                HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


507          KK  RET55B
508          KM   RETAIN THE 100-YR, 2-HR VOLUME,
509          DT    D55B      92
510          DI       0   10000
511          DQ       0   10000
             *
             * DDM    ***** Preserved *****

512          KK    C55B
513          KM   COMBINE 55B WITH DIVERTED FLOWS FROM 45A
514          HC       2
             *
             * DDM    ***** Preserved *****

515          KK    CAP7
516          KM   ROUTE THROUGH CAP#7
517          RS       1    FLOW      -1
518          SV       0   0.167   0.309   0.539   24.52   85.75
519          SE  1560.5    1563 1564.27    1566    1568    1570
520          SQ       0       0     225     460     756    1017
             *
             * DDM    ***** Preserved *****

521          KK   RCAP7
522          KM   ROUTE CAP OVERCHUTE #7 TO SUBBASIN 29B
523          RS       7    FLOW      -1
524          RC    .045     .04    .045    4000    .010
525          RX     100     200     300     303     308     311     411     511
526          RY       3       2       1       0       0       1       2       3
             *
             * DDM    ***** Updated *****

527          KK     29B
528          KM   BASIN 29B
529          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
530          KM    L=        .8  Lca=        .5   S=   52.6  Kn= .092  LAG=  22.9
531          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
532          BA     .08
533          LG     .18      .25     4.00      .66   17.00
534          UI     12.      45.      68.      99.    138.      97.      69.      43.      20.      13.
535          UI      6.       4.       4.       0.      0.       0.       0.       0.       0.       0.
536          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *

537          KK  RET29B
538          KM   RETAIN THE 100-YR, 2-HR VOLUME,
```

```
539          DT    D29B       5
540          DI       0   10000
541          DQ       0   10000
             *
             * DDM   ***** Preserved *****
```



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                                   HEC-1 INPUT

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

542          KK   C29B1
543          KM   COMBINE FLOWS FROM CAP #7 OVERCHUTE AND C29B
544          HC       2
             *
             * DDM   ***** Preserved *****

545          KK   C29B2
546          KM   COMBINE FLOW FROM C29A AND 29B
547          HC       2
             *
             * DDM   ***** Preserved *****

548          KK   29BTC
549          KM   ROUTE CONCENTRATION POINT 29B TO SUBBASIN 29C
550          RS       1    FLOW      -1
551          RC     .03     .02     .03    1000    .018
552          RX     100     200     300     303     318     321     421     521
553          RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
             *
             * DDM   ***** Preserved *****

554          KK   RD45A
555          KM   RETURN DIVERTED FLOWS FROM 45A
556          DR   45ATB
             *
             * DDM   ***** Preserved *****

557          KK   45ATB
558          KM   ROUTE REMAINDER OF FLOWS TO 45B
559          KM   STREET FLOW AND SHEET FLOW, NO DEFINED CHANNEL
560          RS      17    FLOW      -1
561          RC   0.055   0.035   0.055   10000   0.008
562          RX       0     500    1000    1005    1060    1065    1565    2065
563          RY       4       3       2       1       1       2       3       4
             *
             * DDM   ***** Updated *****

564          KK     45B
565          KM   BASIN 45B
566          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
567          KM    L=      1.9  Lca=       .9   S=   45.0  Kn= .052  LAG=  40.0
568          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
569          BA     .66
570          LG     .22     .25    6.00     .22   50.00
571          UI     55.     75.    205.    274.    328.    397.    511.    694.    569.    464.
572          UI    384.    313.    250.    165.     97.     91.     57.     51.     17.     17.
573          UI     17.     17.     17.      0.      0.      0.      0.      0.      0.      0.
574          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
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                                   HEC-1 INPUT

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

575          KK  RET45B
576          KM   RETAIN THE 100-YR, 2-HR VOLUME,
577          DT    D45B      24
578          DI       0   10000
579          DQ       0   10000
```

```
                 *
                 * DDM   ***** Preserved *****

580              KK    C45B
581              KM   COMBINE FLOWS FROM 45A AND 45B
582              HC       2
                 *
                 * DDM   ***** Preserved *****

583              KK    CAP8
584              KM   ROUTE THROUGH CAP OVERCHUTE #8
585              RS       1    FLOW      -1
586              SV       0   1.449   9.494   43.04
587              SE  1562.1    1564    1566    1568
588              SQ       0     120     436     935
                 *
                 * DDM   ***** Preserved *****

589              KK   RCAP8
590              KM   ROUTE CAP OVERCHUTE #8 TO SUBBASIN 29C
591              RS       8    FLOW      -1
592              RC    .045     .04    .045    5000     .01
593              RX     100     200     300     303     308     311     411     511
594              RY       3       2       1       0       0       1       2       3
                 *
                 * DDM   ***** Updated *****

595              KK     29C
596              KM   BASIN 29C
597              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
598              KM    L=        .9  Lca=        .5   S=   58.8  Kn= .074  LAG=  30.0
599              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
600              BA     .23
601              LG     .24     .25    5.70     .27   32.00
602              UI     26.     66.    124.    160.    210.    315.    260.    201.    153.    112.
603              UI     58.     44.     27.     16.      8.      8.      8.      0.      0.      0.
604              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *

605              KK  RET29C
606              KM   RETAIN THE 100-YR, 2-HR VOLUME,
607              DT    D29C      17
608              DI       0   10000
609              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 17

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


610              KK   C29C1
611              KM   COMBINE FLOWS FROM CAP #8 OVERCHUTE AND 29C
612              HC       2
                 *
                 * DDM   ***** Preserved *****

613              KK   C29C2
614              KM   COMBINE FLOWS FROM C29B AND C29C
615              HC       2
                 *
                 * DDM   ***** Preserved *****

616              KK  29CT36
617              KM   ROUTE CONCENTRATION POINT 29A TO SUBBASIN 29B
618              RS       1    FLOW      -1
619              RC    .045    .013    .045    3000    .018
620              RX     100     200     300     303     318     321     421     521
621              RY     6.5     5.5     4.5       0       0     4.5     5.5     6.5
                 *
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```
                 * DDM   ***** Updated *****

622              KK      55
623              KM   BASIN 55
624              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
625              KM    L=        .5  Lca=        .2   S=   72.3  Kn= .081  LAG=  13.2
626              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
627              BA     .14
628              LG     .24      .24     4.60      .40   29.00
629              UI     74.     219.     386.     247.    106.     40.      11.      0.      0.      0.
630              UI      0.       0.       0.       0.      0.      0.       0.      0.      0.      0.
                 *

631              KK   RET55
632              KM   RETAIN THE 100-YR, 2-HR VOLUME,
633              DT     D55       9
634              DI       0   10000
635              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****

636              KK    CAP9
637              RS       1    FLOW      -1
638              SV       0    2.03  10.075  43.569
639              SE  1562.1    1564    1566    1568
640              SQ       0     120     436     935
                 *
                 * DDM   ***** Preserved *****

641              KK   RCAP9
642              KM   ROUTE CAP OVERCHUTE #9 TO SUBBASIN 29D
643              RS      10    FLOW      -1
644              RC     .04    .035     .04    5800     .02
645              RX     100     200     300     303     308     311     411     511
646              RY       3       2       1       0       0       1       2       3
                 *
                 * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

647              KK     29D
648              KM   BASIN 29D
649              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
650              KM    L=      1.2  Lca=       .9   S=   40.7  Kn= .066  LAG=  40.6
651              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
652              BA     .65
653              LG     .21      .25     4.90      .35   43.00
654              UI     54.      70.     196.     265.    315.    381.    480.    670.    573.    462.
655              UI    386.     315.     257.     178.    101.     89.     64.     54.     22.     16.
656              UI     16.      16.      16.      16.      0.      0.      0.      0.      0.      0.
657              UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                 *

658              KK  RET29D
659              KM   RETAIN THE 100-YR, 2-HR VOLUME,
660              DT    D29D      27
661              DI       0   10000
662              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****

663              KK   29T36
664              KM   ROUTE FLOWS FROM S29 TO C36
665              RS       9    FLOW      -1
666              RC   0.035   0.035   0.035    4000  0.0083
667              RX       0    1500    2000    2001    2002    2003    2503    3003
668              RY       2      .5      .1       0       0      .1      .5       2
                 * DDM   ***** Updated *****
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```
669          KK     36C
670          KM   BASIN 36C
671          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
672          KM    L=       1.2  Lca=        .6   S=   44.2  Kn= .020  LAG=  15.5
673          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
674          BA     .44
675          LG     .10      .25     4.65      .47   80.00
676          UI    164.     512.     928.     911.    538.    222.    106.     30.     30.      0.
677          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
678          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
             *

679          KK  RET36C
680          KM   RETAIN THE 100-YR, 2-HR VOLUME,
681          DT    D36C      38
682          DI       0   10000
683          DQ       0   10000
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

684          KK     C36
685          KM   COMBINE FLOWS FROM D29A AND S36
686          HC       4
             *
             * DDM   ***** Preserved *****

687          KK   36T37
688          KM   ROUTE C36 TO C37 VIA ADOT CONCRETE CHANNEL
689          RS       2    FLOW      -1
690          RC   0.035   0.013   0.035    5280  0.0033
691          RX       0     500    1000    1012    1020    1032    1532    2032
692          RY      13    12.5      12       0       0      12    12.5      13
             *
             * DDM   ***** Preserved *****

693          KK  29AWST
694          KM   RETRIEVE FLOWS OVERTOPPING THE CHANNEL ALONG CRISMON
695          DR   29A-W
             * DDM   ***** Updated *****

696          KK      30
697          KM   BASIN 30
698          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
699          KM    L=       2.0  Lca=       1.0   S=   40.0  Kn= .050  LAG=  46.5
700          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
701          BA    1.12
702          LG     .25      .25     4.00      .57   45.00
703          UI     81.      81.     251.     357.    433.    502.    596.    736.   1009.    917.
704          UI    743.     639.     534.     450.    373.    265.    157.    137.    116.     81.
705          UI     70.      25.      25.      25.     25.     25.     25.      0.      0.      0.
706          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
             *

707          KK   RET30
708          KM   RETAIN THE 100-YR, 2-HR VOLUME,
709          DT     D30      21
710          DI       0   10000
711          DQ       0   10000
             *
             * DDM   ***** Preserved *****

712          KK     C30
713          KM   COMBINE 30 WITH DIVERTED FLOWS ALONG CRISMON
714          HC       2
             * DDM   ***** Preserved *****
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```
715          KK   30T37
716          KM   ROUTE FLOWS FROM S30 TO C37 VIA NATURAL CHANNEL
717          RS       4    FLOW      -1
718          RC   0.040   0.035   0.040    2640   0.053
719          RX       0       2       3       4       7       8      28     528
720          RY       6       5       5       0       0       4     4.5       5
             * DDM   ***** Updated *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

721          KK      37
722          KM   BASIN 37
723          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
724          KM    L=      1.0  Lca=       .5   S=   45.0  Kn= .020  LAG=  14.5
725          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
726          BA     .47
727          LG     .10     .25    4.00     .67   80.00
728          UI    198.    606.   1122.    893.    490.    175.     70.     33.      0.      0.
729          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

730          KK   RET37
731          KM   RETAIN THE 100-YR, 2-HR VOLUME,
732          DT     D37      38
733          DI       0   10000
734          DQ       0   10000
             *
             * DDM   ***** Preserved *****

735          KK     C37
736          KM   COMBINE FLOWS FROM S37, S30, AND C36 AT C37
737          HC       3
             *
             * DDM   ***** Preserved *****

738          KK  ADOTEL
739          KM   ADOT DETENTION BASIN 4313 AT ELLSWORTH RD. AND SUPERSTITION
740          KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF MARICOPA
741          KM        COUNTY
742          KM        AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
743          KM            A-N WEST, INC., FEBRUARY, 1987.
744          RS       1    ELEV      56
745          SV       0     617     650
746          SE      56      74      75
747          SL      56    3.14     0.6     .05
748          SS      74     200     2.6     1.5
             *
             * DDM   ***** Preserved *****

749          KK   37T38
750          KM   ROUTE FLOWS FROM C37 TO C38 VIA ADOT CONCRETE CHANNEL
751          RS       2    FLOW      -1
752          RC   0.035   0.012   0.035    5280  0.0045
753          RX       0     500    1000    1012    1020    1032    1532    2032
754          RY      13    12.5      12       0       0      12    12.5      13
             *
             * DDM   ***** Updated *****

755          KK     17A
756          KM   BASIN 17A
757          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
758          KM    L=       .7  Lca=       .5   S=   60.6  Kn= .084  LAG=  20.2
759          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
760          BA     .18
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 761          LG      .23      .24     4.00      .56    43.00
 762          UI      35.     129.     195.     323.     286.     193.     119.      52.      32.      10.
 763          UI       9.       9.       0.       0.       0.       0.       0.       0.       0.       0.
 764          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *

 765          KK  RET17A
 766          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 767          DT    D17A       4
 768          DI       0   10000
 769          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 770          KK  17AT23
 771          KM   ROUTE FLOWS FROM 17 TO 23 VIA DIRT CHANNEL, THEN NATURAL WASH
 772          RS       3    FLOW      -1
 773          RC   0.045   0.032   0.045    2600   0.015
 774          RX       0     100     133     137     142     147     200     300
 775          RY       5       4     3.5       0       0     3.5       4       5
              *
              * DDM   ***** Updated *****

 776          KK      23
 777          KM   BASIN 23
 778          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 779          KM    L=      1.0  Lca=       .3   S=   65.0  Kn= .047  LAG=  20.9
 780          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 781          BA     .28
 782          LG      .22      .25     4.00      .58    42.00
 783          UI      49.     188.     282.     456.     458.     311.     203.      91.      56.      24.
 784          UI      14.      14.       0.       0.       0.       0.       0.       0.       0.       0.
 785          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *

 786          KK   RET23
 787          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 788          DT     D23      10
 789          DI       0   10000
 790          DQ       0   10000
              *
              * DDM   ***** Updated *****

 791          KK      48
 792          KM   BASIN 48
 793          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 794          KM    L=      1.6  Lca=       .8   S=   80.2  Kn= .060  LAG=  36.1
 795          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 796          BA     .77
 797          LG      .27      .25     4.10      .54    22.00
 798          UI      72.     128.     292.     385.     467.     590.     859.     784.     614.     497.
 799          UI     396.     305.     170.     123.      94.      72.      29.      22.      22.      22.
 800          UI      22.       0.       0.       0.       0.       0.       0.       0.       0.       0.
 801          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 802          KK   RET48
 803          KM   RETAIN THE 100-YR, 2-HR VOLUME,
 804          DT     D48      28
 805          DI       0   10000
 806          DQ       0   10000
              *
              * DDM   ***** Preserved *****
```

```
807          KK    CAP3
808          RS       1    FLOW      -1
809          SV       0   0.934   1.222   4.303   13.13
810          SE  1564.6  1567.5    1568    1570    1572
811          SQ       0       0     143     750    1530
             *
             * DDM   ***** Preserved *****

812          KK  RCAP3A
813          KM   ROUTE CAP OVERCHUTE #3 TO APACHE TRAIL (ALONG NATURAL CHANNEL)
814          RS       3    FLOW      -1
815          RC    .055    .045    .055    2000     .02
816          RX     100     200     300     305     310     315     415     515
817          RY       7       6       5       0       0       5       6       7
             *
             * DDM   ***** Preserved *****

818          KK  RCAP3B
819          KM   ROUTE CAP OVERCHUTE #3 FROM APACHE TRAIL TO 17B
820          RS       1    FLOW      -1
821          RC    .045    .035    .045    2300     .01
822          RX     100     200     300     301     311     312     412     512
823          RY       3       2       1       0       0       1       2       3
             *
             * DDM   ***** Updated *****

824          KK     17B
825          KM   BASIN 17B
826          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
827          KM    L=        .8  Lca=       .6   S=   50.0  Kn= .073  LAG=  21.7
828          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
829          BA     .22
830          LG     .19     .24    4.00     .56   55.00
831          UI     35.    140.    210.    323.    380.    257.    177.     87.     51.     27.
832          UI     11.     11.      0.      0.      0.      0.      0.      0.      0.      0.
833          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

834          KK  RET17B
835          KM   RETAIN THE 100-YR, 2-HR VOLUME,
836          DT    D17B       5
837          DI       0   10000
838          DQ       0   10000
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 23

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


839          KK    C17B
840          KM    COMBINE FLOWS FROM CAP OVERCHUTE #3 AND S17B
841          HC       2
             * DDM   ***** Preserved *****

842          KK  17BT22
843          KM   ROUTE FLOWS FROM S17 TO C22 VIA LINED CHANNEL
844          RS       3    FLOW      -1
845          RC   0.035   0.015   0.035    2700  0.0114
846          RX       0       1       3       6      18      21      36      70
847          RY    6.25    6.10       6       0       0       3    3.25     3.5
             *
             * DDM   ***** Updated *****

848          KK      47
849          KM   BASIN 47
850          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
851          KM    L=       3.0  Lca=      1.5   S=   51.2  Kn= .055  LAG=  63.0
852          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
853          BA    1.67
```

```
854          LG      .28      .25     4.00      .55    17.00
855          UI      90.      90.     110.     305.     375.     444.     500.     555.     631.     712.
856          UI     873.    1120.    1085.     904.     790.     711.     623.     548.     480.     424.
857          UI     339.     245.     158.     153.     147.     105.      90.      90.      38.      27.
858          UI      27.      27.      27.      27.      27.      27.      27.       0.       0.       0.
859          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

860          KK   RET47
861          KM   RETAIN THE 100-YR, 2-HR VOLUME,
862          DT     D47      68
863          DI       0   10000
864          DQ       0   10000
             *
             * DDM   ***** Preserved *****

865          KK  CAP4+5
866          KM   ROUTE THROUGH OVERCHUTES 4 AND 5, HUYDRAULICALLY CONNECTED
867          KM   STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
868          RS       1    FLOW      -1
869          SV       0   0.081   0.483   4.779   39.02  121.88
870          SE  1568.3    1570    1572    1574    1576    1578
871          SQ       0     170     575    1085    1245    1410
             *
             * DDM   ***** Preserved *****

872          KK   RCAP4
873          KM   ROUTE CAP OVERCHUTE #4 AND #5 TO SUBBASIN 22
874          RS      10    FLOW      -1
875          RC     .05    .045     .05    6000    .005
876          RX     100     200     300     304     310     314     414     514
877          RY       6       5       4       0       0       4       5       6
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

878          KK      22
879          KM   BASIN 22
880          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
881          KM    L=      1.2  Lca=       .3   S=   51.3  Kn= .048  LAG=  21.4
882          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
883          BA     .41
884          LG     .22      .25     4.00      .57    52.00
885          UI     66.     263.     394.     616.     686.     463.     314.     148.      88.      45.
886          UI     20.      20.       0.       0.       0.       0.       0.       0.       0.       0.
887          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

888          KK   RET22
889          KM   RETAIN THE 100-YR, 2-HR VOLUME,
890          DT     D22      11
891          DI       0   10000
892          DQ       0   10000
             *
             * DDM   ***** Preserved *****

893          KK    C22A
894          KM   COMBINE FLOWS FROM CAP OVERCHUTES 4 & 5 AND SUBBASIN 22
895          HC       2
             * DDM   ***** Preserved *****

896          KK     C22
897          KM   COMBINE S17B AND S22
898          HC       2
             * DDM   ***** Preserved *****

899          KK   22T23
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```
900          KM   ROUTE C22 TO C23 VIA CONCRETE CHANNEL
901          KM   VELOCITY = 5FT/S
902          RS       2    FLOW      -1
903          RC   0.045   0.022   0.042    2640   0.001
904          RX       0     102     103     106    1021     124     128     270
905          RY       7     6.5       6       0       0       3       5       7
             *
             * DDM   ***** Preserved *****

906          KK     C23
907          KM   COMBINE FLOWS FROM C22, C17A, AND S23 AT C23
908          HC       3
             * DDM   ***** Preserved *****

909          KK   23T24
910          KM   ROUTE FLOWS FROM C23 TO C24 VIA CONCRETE LINED CHANNEL
911          RS       2    FLOW      -1
912          RC   0.045   0.022   0.045    2640  0.0117
913          RX       0       2       3       6      21      24      26      70
914          RY       6       6       6       0       0       3       5       6
             *
             * DDM   ***** Updated *****
```



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                                          HEC-1 INPUT

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

915          KK      49
916          KM   BASIN 49
917          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
918          KM    L=       1.6  Lca=        .8   S=   73.6  Kn= .060  LAG=  36.2
919          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
920          BA     .79
921          LG     .27     .25    4.15     .53   23.00
922          UI     73.    130.    297.    391.    475.    598.    872.    804.    629.    510.
923          UI    406.    316.    176.    125.     98.     73.     32.     23.     23.     23.
924          UI     23.      0.      0.      0.      0.      0.      0.      0.      0.      0.
925          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

926          KK   RET49
927          KM   RETAIN THE 100-YR, 2-HR VOLUME,
928          DT     D49      27
929          DI       0   10000
930          DQ       0   10000
             *
             * DDM   ***** Preserved *****

931          KK    CAP2
932          RS       1    FLOW      -1
933          SV       0    0.02   0.538   2.545  13.729
934          SE  1565.1    1566    1568    1570    1572
935          SQ       0      60     340     807    1395
             *
             * DDM   ***** Preserved *****

936          KK   RCAP2
937          KM   ROUTE CAP OVERCHUTE #2 ACROSS ELLSWORTH ROAD TO 18A
938          RS      10    FLOW      -1
939          RC    .045    .040    .045    7500    .012
940          RX     100     200     300     316     321     329     429     529
941          RY       6       5       3       0       0       3       5       6
             *
             * DDM   ***** Updated *****

942          KK      50
943          KM   BASIN 50
944          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
945          KM    L=        .9  Lca=        .4   S=   81.4  Kn= .079  LAG=  22.7
946          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
947          BA      .28
948          LG      .23      .24     4.00      .55    43.00
949          UI      41.     157.     239.     351.     474.     332.     234.     140.      69.      44.
950          UI      17.      13.      13.       0.       0.       0.       0.       0.       0.       0.
951          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
1                                                HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


952          KK   RET50
953          KM   RETAIN THE 100-YR, 2-HR VOLUME,
954          DT     D50      13
955          DI       0   10000
956          DQ       0   10000
             *
             * DDM   ***** Preserved *****

957          KK    CAP1
958          RS       1    FLOW      -1
959          SV       0   0.091   0.575   3.319  13.256
960          SE    1566    1568    1570    1572    1574
961          SQ       5      90     275     470     610
             *
             * DDM   ***** Preserved *****

962          KK   RCAP1
963          KM   ROUTE CAP OVERCHUTE #1 TO SUBBASIN 18A
964          RS      11    FLOW      -1
965          RC     .05    .045     .05    7000     .02
966          RX     100     200     300     301     303     304     404     505
967          RY       6       5       2       0       0       2       5       6
             *
             * DDM   ***** Updated *****

968          KK     18A
969          KM   BASIN 18A
970          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
971          KM    L=      1.0  Lca=       .5   S=   60.6  Kn= .065  LAG=  27.2
972          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
973          BA    1.01
974          LG     .22      .25     4.10      .57    42.00
975          UI    125.     367.     643.     839.    1219.    1445.    1040.     779.     565.     283.
976          UI    200.     125.      52.      38.      38.      38.       0.       0.       0.       0.
977          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *

978          KK  RET18A
979          KM   RETAIN THE 100-YR, 2-HR VOLUME,
980          DT    D18A      33
981          DI       0   10000
982          DQ       0   10000
             *
             * DDM   ***** Preserved *****

983          KK    C18A
984          KM   COMBINE FLOWS FROM CAP OVERCHUTE #1 AND CAP #2 AND SUBBASIN 18A
985          HC       3
             * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 27

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


986          KK   18T24
987          KM   ROUTE FLOWS FROM S18 TO C24 VIA HAWES ROAD
988          RS       2    FLOW      -1
989          RC   0.035   0.022   0.035    2640   0.006
```

```
 990          RX       0    1005    1009    1010    1041    1042    1044    2049
 991          RY       3     2.5     1.5       0       0     1.5     2.5       3
              * DDM   ***** Updated *****

 992          KK      24
 993          KM   BASIN 24
 994          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 995          KM    L=        .9  Lca=        .5   S=   43.5  Kn= .052  LAG=  24.1
 996          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 997          BA     .29
 998          LG     .24     .25    4.00     .58   43.00
 999          UI     41.    145.    228.    315.    484.    369.    269.    186.     89.     58.
1000          UI     35.     13.     13.     13.      0.      0.      0.      0.      0.      0.
1001          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1002          KK   RET24
1003          KM   RETAIN THE 100-YR, 2-HR VOLUME,
1004          DT     D24       2
1005          DI       0   10000
1006          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1007          KK     C24
1008          KM   COMBINE FLOWS FROM C23, S18A AND S24
1009          HC       3
              * DDM   ***** Preserved *****

1010          KK  24T31A
1011          KM   ROUTE FLOWS FROM C24 TO C31 VIA HAWES ROAD
1012          RS       6    FLOW      -1
1013          RC   0.040   0.040   0.040    2640  0.0044
1014          RX       0    1000    1012    1013    1017    1018    1518    2018
1015          RY       4       3       3       0       0       7     7.5       8
              * DDM   ***** Preserved *****

1016          KK  24T31B
1017          KM   ROUTE FLOWS FROM C24 TO C31 VIA NATURAL CHANNEL
1018          RS       4    FLOW      -1
1019          RC   0.040   0.035   0.040    2640  0.0044
1020          RX       0    1000    1020    1024    1036    1040    1070    2070
1021          RY      15      14       4       0       0       4      19      20
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1022          KK     31B
1023          KM   BASIN 31B
1024          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1025          KM    L=       1.2  Lca=        .5   S=   29.7  Kn= .049  LAG=  33.3
1026          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1027          BA     .47
1028          LG     .24     .25    4.45     .46   37.00
1029          UI     48.     99.    209.    270.    337.    465.    580.    440.    352.    275.
1030          UI    210.    115.     81.     59.     44.     15.     15.     15.     15.      0.
1031          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1032          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1033          KK  RET31B
1034          KM   RETAIN THE 100-YR, 2-HR VOLUME,
1035          DT    D31B      23
1036          DI       0   10000
1037          DQ       0   10000
              *
              * DDM   ***** Preserved *****
```

```
1038          KK     C31
1039          KM   COMBINE FLOWS FROM C24  WITH S31A AND S31B
1040          HC       2
              *
              * DDM   ***** Preserved *****

1041          KK     D31
1042          KM   DIVERT FLOWS AT THE SPLITTER BOX AT HAWES AND SOUTHERN TO SOSS. CHANNEL/BASIN
1043          DT    D31W
1044          DI       0     300    1000   10000
1045          DQ       0       0     700    9700
              * DDM   ***** Preserved *****

1046          KK   31T38
1047          KM     ROUTE FLOWS FROM S31 TO C38 VIA  CONCRETE CHANNEL ALONG HAWES
1048          RS       1    FLOW      -1
1049          RC    .035    .012    .035    2640    .003
1050          RX       0       3       7      10      15      18      21      24
1051          RY       5       5       5       0       0       5       5       5
              * DDM   ***** Updated *****

1052          KK     31A
1053          KM   BASIN 31A
1054          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1055          KM    L=      1.0  Lca=       .5   S=   43.3  Kn= .047  LAG=  28.4
1056          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1057          BA     .53
1058          LG     .24     .25    4.15     .54   47.00
1059          UI     63.    174.    316.    408.    566.    764.    568.    435.    326.    200.
1060          UI    109.     79.     50.     19.     19.     19.      0.      0.      0.      0.
1061          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1062          KK  RET31A
1063          KM   RETAIN THE 100-YR, 2-HR VOLUME,
1064          DT    D31A      16
1065          DI       0   10000
1066          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1067          KK  31AT38
1068          KM   ROUTE S31A TO 38
1069          RS       6    FLOW      -1
1070          RC     .04     .03     .04    3500    .012
1071          RX     100     200     300     302     307     309     409     509
1072          RY       4       3       2       0       0       2       3       4
              *
              * DDM   ***** Updated *****

1073          KK      38
1074          KM   BASIN 38
1075          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1076          KM    L=      1.1  Lca=       .8   S=   37.0  Kn= .041  LAG=  25.7
1077          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1078          BA     .47
1079          LG     .18     .25    4.25     .54   56.00
1080          UI     61.    199.    328.    437.    685.    631.    461.    336.    211.    106.
1081          UI     74.     40.     19.     19.     19.      0.      0.      0.      0.      0.
1082          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1083          KK   RET38
1084          KM   RETAIN THE 100-YR, 2-HR VOLUME,
1085          DT     D38      15
```

```
1086          DI       0   10000
1087          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1088          KK     C38
1089          KM   COMBINE FLOWS FROM S38, C37 AND D31A AND B AT C38
1090          HC       4
              * DDM   ***** Preserved *****

1091          KK   38T39
1092          KM   ROUTE FLOWS FROM C38 TO C39 VIA CONCRETE CHANNEL
1093          RS       1    FLOW      -1
1094          RC   0.035   0.012   0.035    3960  0.0066
1095          RX       0     500    1000    1012    1020    1032    1532    2032
1096          RY      13    12.5      12       0       0      12    12.5      13
              * ADOT DETENTION BASINS FROM URS REPORT SEPT 1988
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1097          KK   ADD10
1098          KM    BASIN #10 - OFF-LINE DETENTION POND TO ATTENUATE PEAK FLOWS
1099          KM     BUT DO NOT DELAY THE PEAK
1100          DT    DB10
1101          DI     807     879     961    1070    1190    1320
1102          DQ       0      29      61     120     190     270
              * DDM   ***** Preserved *****

1103          KK    ADD9
1104          KM   BASIN #9 - OFF-LINE DETENTION POND
1105          DT     DB9
1106          DI     626     660     751     861     987    1128
1107          DQ       0      10      51     110     189     278
              * DDM   ***** Preserved *****

1108          KK    ADD8
1109          KM   BASIN #8 - OFF-LINE DETENTION POND
1110          DT     DB8
1111          DI     464     521     627     752     898
1112          DQ       0      21      77     152     248
              * DDM   ***** Preserved *****

1113          KK    ADD7
1114          KM   BASIN #7 - OFF-LINE DETENTION POND
1115          DT     DB7
1116          DI     770     810     892     988    1093    1207    1331    1462
1117          DQ       0      10      42      88     143     207     281     362
              * DDM   ***** Preserved *****

1118          KK    ADD6
1119          KM   BASIN #6 - OFF-LINE DETENTION POND
1120          DT     DB6
1121          DI     685     703     781     875     978    1092    1215
1122          DQ       0       3      31      75     128     192     265
              * DDM   ***** Preserved *****

1123          KK    ADD5
1124          KM   BASIN #5 - OFF-LINE DETENTION POND
1125          DT     DB5
1126          DI    1005    1063    1141    1227    1320    1421    1527
1127          DQ       0      13      41      77     120     171     227
              * DDM   ***** Preserved *****

1128          KK    D31W
1129          KM   RETRIEVE DIVERTED HYDROGRAPH D31A
1130          DR    D31W
              *
```

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                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 31

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


1131          KK  31WT32
1132          KM   ROUTE FLOWS FROM D31A TO C32
1133          RS       2    FLOW      -1
1134          RC    .035    .022    .035    5280   .0027
1135          RX       0    2005    2012    2012    2106    2106    2113    3122
1136          RY     4.5     4.5     3.5       0       0     3.5     4.5     4.5
              *
              * DDM   ***** Updated *****

1137          KK      32
1138          KM   BASIN 32
1139          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1140          KM    L=        .9  Lca=        .5   S=   38.9  Kn= .055  LAG=  29.1
1141          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1142          BA     .38
1143          LG     .23     .25    4.55     .44   27.00
1144          UI     43.    115.    212.    273.    368.    529.    407.    314.    237.    161.
1145          UI     81.     62.     43.     14.     13.     13.     13.      0.      0.      0.
1146          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KK RET32
              * KM RETAIN THE 100-YR, 2-HR VOLUME, NO FUTURE DEVELOPMENT
              * DT   D32       0
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****

1147          KK     C32
1148          KM    COMBINE SOSSAMAN CHANNEL FLOWS WITH FLOWS FROM 32
1149          HC       2
              *
              * DDM   ***** Preserved *****

1150          KK   32T39
1151          KM   ROUTE FLOWS FROM C32 TO C39
1152          RS       1    FLOW      -1
1153          RC   0.012   0.012   0.012    2640   0.004
1154          RX       0       5      10      28      38      60      65      70
1155          RY      14      14      14       0       0      14      14      14
              * DDM   ***** Updated *****

1156          KK      39
1157          KM   BASIN 39
1158          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1159          KM    L=        .9  Lca=        .7   S=   38.0  Kn= .060  LAG=  32.4
1160          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1161          BA     .36
1162          LG     .22     .25    4.60     .41   44.00
1163          UI     37.     81.    165.    213.    269.    383.    437.    325.    258.    200.
1164          UI    142.     76.     61.     37.     24.     11.     11.     11.     11.      0.
1165          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1166          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                                HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1167          KK   RET39
1168          KM   RETAIN THE 100-YR, 2-HR VOLUME,
1169          DT     D39       4
1170          DI       0   10000
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1171          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1172          KK     C39
1173          KM   COMBINE FLOWS FROM C32, C38 AND S39 AT C39
1174          HC       3
              *
              * DDM   ***** Preserved *****

1175          KK    SOSS
1176          KM   THIS WAS FORMERLY CALLED CHANNEL
1177          KM   DIVERT FLOWS IN EXCESS OF 1800 CFS TO SOSSAMAN DET. BASIN
1178          KM   IN REALITY, BACKWATER FROM THE ADOT CROSSING DETERMINS THE AMOUNT OF SPILL
1179          KM   SUPERSTITION FREEWAY
1180          ZW    A=SOSSAMAN DRAIN  B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
1181          DT   BASIN
1182          DI       0    1800    2000   10000
1183          DQ       0       0     200    8200
1184          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    64          42
                .
                .
    78          .------->     D42
    76       RET42
                V
                V
    81       42T51
                .
                .
    86          .          51
                .           .
                .           .
    98          .           .------->     D51
    96          .       RET51
                .           .
                .           .
   101        C51............
                V
                V
   104       51T53
                .
                .
   110          .         44A
                .           .
                .           .
   124          .           .------->    D44A
   122          .      RET44A
                .           .
                .           .
   129          .           .------->    D44A
   127          .      DIV44A
                .           .
                .           .
   132          .           .          43
                .           .           .
                .           .           .
   145          .           .           .------->     D43
   143          .           .       RET43
                .           .           .
                .           .           .
   148          .         C43............
                .           V
                .           V
```

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151          .        43T53
             .           .
             .           .
156          .           .          53
             .           .           .
             .           .           .
169          .           .           .-------->     D53
167          .           .      RET53
             .           .           .
             .           .           .
172        C53.......................
             .
             .
175          .          54
             .           .
             .           .
188          .           .-------->     D54
186          .        RET54
             .           .
             .           .
191        C54............
             .
             .
197          .-------->   SOUTH
194     DCAP12
           V
           V
200      CAP12
             .
             .
207          .           .<--------    D44A
205          .        DR44A
             .           V
             .           V
208          .        44ATB
             .           .
             .           .
215          .           .         44B
             .           .           .
             .           .           .
228          .           .           .-------->    D44B
226          .           .      RET44B
             .           .           .
             .           .           .
231          .         C44B............
             .           V
             .           V
234          .       CAP10+
             .           V
             .           V
241          .       RCAP11
             .           .
             .           .
244        C12............
             V
             V
247     ADOT-W
           V
           V
258     RADOTW
             .
             .
264          .          36B
             .           .
             .           .
277          .           .-------->    D36B
275          .       RET36B
             .           .
             .           .
280       C36B............
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                .
286             .           .<-------   SOUTH
284             .      RSOUTH
                .           .
                .           .
287             .           .          57
                .           .           .
                .           .           .
298             .           .           .------->     D57
296             .           .       RET57
                .           .           .
                .           .           .
301             .         C57............
                .           V
                .           V
304             .      CAP13+
                .           .
                .           .
311             .           .         36A
                .           .           .
                .           .           .
323             .           .           .------->    D36A
321             .           .      RET36A
                .           .           .
                .           .           .
326             .        C36A............
                .           V
                .           V
329             .      ADOT-E
                .           .
                .           .
341       CFAKE............
                .
                .
345             .          52
                .           .
                .           .
358             .           .------->     D52
356             .       RET52
                .           .
                .           .
361             .           .          56
                .           .           .
                .           .           .
374             .           .           .------->     D56
372             .           .       RET56
                .           .           .
                .           .           .
377             .         C56............
                .           V
                .           V
382             .       56T58
                .           .
                .           .
387             .           .          58
                .           .           .
                .           .           .
399             .           .           .------->     D58
397             .           .       RET58
                .           .           .
                .           .           .
402             .         C58............
                .           .
                .           .
410             .           .         46B
                .           .           .
                .           .           .
423             .           .           .------->    D46B
421             .           .      RET46B
                .           .           V
                .           .           V
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426          .          .        CAP6
             .          .           V
             .          .           V
431          .          .       RCAP6
             .          .           V
             .          .           V
437          .          .      RCAP6B
             .          .           .
             .          .           .
443          .          .           .         29A
             .          .           .           .
             .          .           .           .
455          .          .           .           .-------->    D29A
453          .          .           .      RET29A
             .          .           .           .
             .          .           .           .
458          .          .        C29A............
             .          .           .
             .          .           .
462          .          .           .-------->   29A-W
460          .          .       29A-S
             .          .           V
             .          .           V
465          .          .       29ATB
             .          .           .
             .          .           .
471          .          .           .         45A
             .          .           .           .
             .          .           .           .
485          .          .           .           .-------->    D45A
483          .          .           .      RET45A
             .          .           .           .
             .          .           .           .
491          .          .           .           .-------->   45ATB
488          .          .           .        D45A
             .          .           .           .
             .          .           .           .
494          .          .           .           .         55B
             .          .           .           .           .
             .          .           .           .           .
509          .          .           .           .           .-------->    D55B
507          .          .           .           .      RET55B
             .          .           .           .           .
             .          .           .           .           .
512          .          .           .        C55B............
             .          .           .           V
             .          .           .           V
515          .          .           .        CAP7
             .          .           .           V
             .          .           .           V
521          .          .           .       RCAP7
             .          .           .           .
             .          .           .           .
527          .          .           .           .         29B
             .          .           .           .           .
             .          .           .           .           .
539          .          .           .           .           .-------->    D29B
537          .          .           .           .      RET29B
             .          .           .           .           .
             .          .           .           .           .
542          .          .           .       C29B1............
             .          .           .           .
             .          .           .           .
545          .          .       C29B2............
             .          .           V
             .          .           V
548          .          .       29BTC
             .          .           .
             .          .           .
556          .          .           .           .<-------   45ATB
554          .          .           .       RD45A
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                                  V
                                  V
557                           45ATB
                                  .
                                  .
564                               .          45B
                                  .            .
                                  .            .
577                               .            .-------->    D45B
575                               .       RET45B
                                  .            .
                                  .            .
580                           C45B............
                                  V
                                  V
583                           CAP8
                                  V
                                  V
589                           RCAP8
                                  .
                                  .
595                               .          29C
                                  .            .
                                  .            .
607                               .            .-------->    D29C
605                               .       RET29C
                                  .            .
                                  .            .
610                           C29C1...........
                                  .
                                  .
613                       C29C2...........
                              V
                              V
616                       29CT36
                                  .
                                  .
622                               .          55
                                  .            .
                                  .            .
633                               .            .-------->    D55
631                           RET55
                                  V
                                  V
636                           CAP9
                                  V
                                  V
641                           RCAP9
                                  .
                                  .
647                               .          29D
                                  .            .
                                  .            .
660                               .            .-------->    D29D
658                               .       RET29D
                                  .            V
                                  .            V
663                               .       29T36
                                  .            .
                                  .            .
669                               .            .         36C
                                  .            .           .
                                  .            .           .
681                               .            .           .-------->    D36C
679                               .            .      RET36C
                                  .            .           .
                                  .            .           .
684                       C36.....................................
                              V
                              V
687                       36T37
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695                 .<-------   29A-W
693              29AWST
                     .
                     .
696                  .          30
                     .           .
                     .           .
709                  .           .------->     D30
707                  .       RET30
                     .           .
                     .           .
712                C30............
                     V
                     V
715               30T37
                     .
                     .
721                  .          37
                     .           .
                     .           .
732                  .           .------->     D37
730                  .       RET37
                     .           .
                     .           .
735            C37.......................
                 V
                 V
738           ADOTEL
                 V
                 V
749            37T38
                     .
                     .
755                17A
                     .
                     .
767                  .------->   D17A
765              RET17A
                     V
                     V
770              17AT23
                     .
                     .
776                  .          23
                     .           .
                     .           .
788                  .           .------->     D23
786                  .       RET23
                     .           .
                     .           .
791                  .           .          48
                     .           .           .
                     .           .           .
804                  .           .           .------->     D48
802                  .           .       RET48
                     .           .           V
                     .           .           V
807                  .           .        CAP3
                     .           .           V
                     .           .           V
812                  .           .      RCAP3A
                     .           .           V
                     .           .           V
818                  .           .      RCAP3B
                     .           .           .
                     .           .           .
824                  .           .           .          17B
                     .           .           .           .
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836                                                                  .------->   D17B
834                                                            RET17B
                                                                     .
                                                                     .
839                                                       C17B............
                                                             V
                                                             V
842                                                      17BT22
                                                                     .
                                                                     .
848                                                                 47
                                                                     .
                                                                     .
862                                                                  .------->   D47
860                                                            RET47
                                                                     V
                                                                     V
865                                                            CAP4+5
                                                                     V
                                                                     V
872                                                            RCAP4
                                                                     .
                                                                     .
878                                                                  .          22
                                                                     .          .
                                                                     .          .
890                                                                  .          .------->
D22
888                                                                  .       RET22
                                                                     .          .
                                                                     .          .
893                                                            C22A............
                                                                     .
                                                                     .
896                                                       C22............
                                                             V
                                                             V
899                                                      22T23
                                                                     .
                                                                     .
906                                  C23......................
                                       V
                                       V
909                                 23T24
                                       .
                                       .
915                                          49
                                                .
                                                .
928                                             .-------->   D49
926                                       RET49
                                                V
                                                V
931                                        CAP2
                                                V
                                                V
936                                       RCAP2
                                                .
                                                .
942                                                     50
                                                         .
                                                         .
954                                                      .-------->   D50
952                                                  RET50
                                                         V
                                                         V
957                                                   CAP1
                                                         V
                                                         V
962                                                  RCAP1
                                                         .
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968                                                  18A
                                                      .
                                                      .
980                                                   .------->   D18A
978                                              RET18A
                                                      .
                                                      .
983                                 C18A.......................
                                      V
                                      V
986                                18T24
                                      .
                                      .
992                                                24
                                                      .
                                                      .
1004                                                  .------->   D24
1002                                           RET24
                                                      .
                                                      .
1007                          C24........................
                                V
                                V
1010                       24T31A
                                V
                                V
1016                       24T31B
                                .
                                .
1022                                  31B
                                      .
                                      .
1035                                  .------->   D31B
1033                            RET31B
                                      .
                                      .
1038                          C31............
                                .
                                .
1043                            .------->   D31W
1041                          D31
                                V
                                V
1046                        31T38
                                .
                                .
1052                                  31A
                                      .
                                      .
1064                                  .------->   D31A
1062                            RET31A
                                      V
                                      V
1067                            31AT38
                                      .
                                      .
1073                                               38
                                                      .
                                                      .
1085                                                  .------->   D38
1083                                           RET38
                                                      .
                                                      .
1088                     C38.....................................
                           V
                           V
1091                    38T39
                           .
                           .
1100                       .------->   DB10
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1097          .          .        ADD10
              .          .           .
              .          .           .
1105          .          .           .------->     DB9
1103          .          .        ADD9
              .          .           .
              .          .           .
1110          .          .           .------->     DB8
1108          .          .        ADD8
              .          .           .
              .          .           .
1115          .          .           .------->     DB7
1113          .          .        ADD7
              .          .           .
              .          .           .
1120          .          .           .------->     DB6
1118          .          .        ADD6
              .          .           .
              .          .           .
1125          .          .           .------->     DB5
1123          .          .        ADD5
              .          .           .
              .          .           .
1130          .          .           .           .<-------    D31W
1128          .          .           .        D31W
              .          .           .           V
              .          .           .           V
1131          .          .           .      31WT32
              .          .           .           .
              .          .           .           .
1137          .          .           .           .          32
              .          .           .           .           .
              .          .           .           .           .
1147          .          .           .         C32............
              .          .           .           V
              .          .           .           V
1150          .          .           .       32T39
              .          .           .           .
              .          .           .           .
1156          .          .           .           .          39
              .          .           .           .           .
              .          .           .           .           .
1169          .          .           .           .           .------->     D39
1167          .          .           .           .       RET39
              .          .           .           .           .
              .          .           .           .           .
1172          .          .         C39.......................
              .          .           .
              .          .           .
1181          .          .           .------->   BASIN
1175          .          .        SOSS
```

```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
*****************************************
 *                                       *                                                    *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                    *    U.S. ARMY
CORPS OF ENGINEERS      *
 *               JUL   1997              *                                                    *    HYDROLOGIC
ENGINEERING CENTER     *
 *            VERSION 4.1                *                                                    *          609
SECOND STREET           *
 *                                       *                                                    *       DAVIS,
CALIFORNIA 95616        *
 *  RUN DATE   25JUN98  TIME  13:47:03   *                                                    *           (916)
756-1104             *
 *                                       *                                                    *
*
 *****************************************
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                    FUTURE LAND USE WITH RETENTION AND EXISTING ROUTING
                    ASSUMING 80% RETENTION EFFECTIVENESS

                    SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
                    AREA NORTH OF SUPERSTITION FREEWAY


                    REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
                    TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS

                    FILENAME:  FUTN.DAT

                    THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
                    TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.

                    100-YEAR 24-HOUR FREQUENCY


                    METHODOLOGY
                    THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
                    SCS TYPE II RAINFALL DISTRIBUTION
                    S-GRAPH HYDROGRAPH
                    GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
                    NORMAL DEPTH STORAGE CHANNEL ROUTING
                    APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
                    EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
                    DATED 1994
                    THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS

                    INITIAL STUDY PERFORMED BY LISA C. YOUNG
                    REVIEWED BY VALERIE A. SWICK
                    HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
                    DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

                    ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
                    CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL


                     LAST UPDATED ON 3/13/98

                     UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE FAMILY HOUSING

                    DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN

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

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE     1APR97  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     4APR97  ENDING DATE
                    NDTIME       1115  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .08 HOURS
                   TOTAL TIME BASE   83.25 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

47 JD INDEX STORM NO. 1
STRM 3.60 PRECIPITATION DEPTH
TRDA .01 TRANSPOSITION DRAINAGE AREA

48 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

58 JD INDEX STORM NO. 2
STRM 3.58 PRECIPITATION DEPTH
TRDA 1.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

59 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

60 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

.00	.00	.00	.00	.00	.00	.00	.00

61 JD INDEX STORM NO. 5

STRM 3.24 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

62 JD INDEX STORM NO. 6

STRM 3.10 PRECIPITATION DEPTH

TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

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 63 JD          INDEX STORM NO. 7
                      STRM        3.05  PRECIPITATION DEPTH
                      TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .01       .00       .01
.01       .01       .01       .01       .01       .01       .01       .01       .03       .03
.03       .09       .09       .09       .01       .01       .01       .01       .01       .01
.01       .01       .01       .01       .01       .01       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
.00       .00       .00       .00       .00       .00       .00       .00

WARNING --- ROUTED OUTFLOW (   1103.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1120.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1132.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1139.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1140.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1135.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1123.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1104.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1110.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1122.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1129.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1130.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1126.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1115.) IS GREATER THAN MAXIMUM OUTFLOW (   1098.) IN STORAGE-OUTFLOW TABLE
   -----DSS---ZOPEN:  Existing File Opened,  File: FUTN.DSS
                      Unit:  71;  DSS Version: 6-EA
-----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
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 -----DSS---ZWRITE Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/31MAR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/01APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/02APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/03APR1997/5MIN/OBSERVED/
 -----DSS---ZWRITE Unit  71; Vers.    4:  /CONCENTRATION POINT C58/FLOW TO
OVERCHUTES/FLOW/04APR1997/5MIN/OBSERVED/
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   13:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    7:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   37:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   19:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   19:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   38:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   20:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   20:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   39:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   21:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   21:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   40:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   22:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   22:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   41:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   23:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   23:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   42:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   24:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   24:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
 -----DSS---ZWRITE Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
1
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	42	1335.	12.75	274.	83.	28.	1.75		
+	DIVERSION TO	D42	915.	12.42	94.	27.	9.	1.75		

+	HYDROGRAPH AT RET42	1335.	12.75	207.	56.	19.	1.75
+	ROUTED TO 42T51	1118.	13.33	205.	56.	19.	1.75
+	HYDROGRAPH AT 51	1511.	12.33	224.	72.	24.	1.24
+	DIVERSION TO D51	971.	12.08	84.	25.	8.	1.24
+	HYDROGRAPH AT RET51	1511.	12.33	169.	47.	16.	1.24
+	2 COMBINED AT C51	1485.	12.33	363.	101.	34.	2.99
+	ROUTED TO 51T53	1050.	14.08	359.	101.	34.	2.99
+	HYDROGRAPH AT 44A	1184.	12.75	237.	72.	24.	1.59
+	DIVERSION TO D44A	844.	12.42	83.	24.	8.	1.59
+	HYDROGRAPH AT RET44A	1184.	12.75	178.	48.	16.	1.59
+	DIVERSION TO D44A	874.	12.75	137.	37.	12.	1.59
+	HYDROGRAPH AT DIV44A	310.	12.75	41.	11.	4.	1.59
+	HYDROGRAPH AT 43	1598.	12.42	261.	85.	28.	1.42
+	DIVERSION TO D43	1136.	12.17	105.	31.	10.	1.42
+	HYDROGRAPH AT RET43	1598.	12.42	191.	54.	18.	1.42
+	2 COMBINED AT C43	1643.	12.50	227.	63.	21.	3.01
+	ROUTED TO 43T53	990.	13.58	222.	63.	21.	3.01
+	HYDROGRAPH AT 53	805.	12.50	131.	41.	14.	.78
+	DIVERSION TO D53	527.	12.17	46.	14.	5.	.78
+	HYDROGRAPH AT RET53	805.	12.50	98.	27.	9.	.78
+	3 COMBINED AT C53	1827.	13.75	643.	183.	61.	6.78
+	HYDROGRAPH AT 54	493.	12.50	79.	24.	8.	.49
+	DIVERSION TO D54	174.	12.08	18.	6.	2.	.49
+	HYDROGRAPH AT RET54	493.	12.50	69.	18.	6.	.49

+	2 COMBINED AT	C54	1846.	13.75	700.	199.	66.	7.27
+	DIVERSION TO	SOUTH	698.	13.75	204.	51.	17.	7.27
+	HYDROGRAPH AT	DCAP12	1148.	13.75	496.	148.	49.	7.27
+	ROUTED TO	CAP12	1060.	14.08	494.	148.	49.	7.27
+	HYDROGRAPH AT	DR44A	844.	12.42	83.	24.	8.	1.59
+	ROUTED TO	44ATB	364.	13.33	84.	24.	8.	1.59
+	HYDROGRAPH AT	44B	1314.	12.42	197.	61.	20.	1.06
+	DIVERSION TO	D44B	248.	11.83	37.	12.	4.	1.06
+	HYDROGRAPH AT	RET44B	1314.	12.42	180.	49.	16.	1.06
+	2 COMBINED AT	C44B	1508.	12.42	249.	73.	24.	1.06
+	ROUTED TO	CAP10+	1418.	12.50	249.	73.	24.	1.06
+	ROUTED TO	RCAP11	1404.	12.50	249.	73.	24.	1.06
+	2 COMBINED AT	C12	1915.	12.58	719.	216.	72.	8.33
+	ROUTED TO	ADOT-W	395.	15.42	375.	215.	72.	8.33
+	ROUTED TO	RADOTW	395.	15.50	375.	215.	72.	8.33
+	HYDROGRAPH AT	36B	318.	12.58	53.	15.	5.	.32
+	DIVERSION TO	D36B	318.	12.58	38.	10.	3.	.32
+	HYDROGRAPH AT	RET36B	204.	12.83	18.	5.	2.	.32
+	2 COMBINED AT	C36B	445.	12.92	383.	218.	73.	8.65
+	HYDROGRAPH AT	RSOUTH	698.	13.75	204.	51.	17.	7.27
+	HYDROGRAPH AT	57	421.	12.00	36.	12.	4.	.18
+	DIVERSION TO	D57	421.	12.00	27.	8.	3.	.18
+	HYDROGRAPH AT	RET57	271.	12.08	14.	4.	1.	.18
	2 COMBINED AT							

+	C57	796.	13.58	247.	63.	21.	.18
ROUTED TO +	CAP13+	793.	13.67	247.	63.	21.	.18
HYDROGRAPH AT +	36A	133.	12.25	15.	5.	2.	.10
DIVERSION TO +	D36A	127.	12.17	9.	3.	1.	.10
HYDROGRAPH AT +	RET36A	122.	12.33	7.	2.	1.	.10
2 COMBINED AT +	C36A	796.	13.67	254.	65.	22.	.28
ROUTED TO +	ADOT-E	248.	14.50	176.	64.	22.	.28
2 COMBINED AT +	CFAKE	612.	14.58	533.	272.	91.	8.93
HYDROGRAPH AT +	52	507.	12.42	84.	26.	9.	.43
DIVERSION TO +	D52	468.	12.33	47.	13.	4.	.43
HYDROGRAPH AT +	RET52	500.	12.50	47.	13.	4.	.43
HYDROGRAPH AT +	56	710.	12.42	117.	37.	12.	.55
DIVERSION TO +	D56	434.	12.08	42.	13.	4.	.55
HYDROGRAPH AT +	RET56	710.	12.42	90.	25.	8.	.55
2 COMBINED AT +	C56	1145.	12.50	136.	38.	13.	.98
ROUTED TO +	56T58	754.	12.83	135.	38.	13.	.98
HYDROGRAPH AT +	58	1265.	12.33	191.	63.	21.	.95
DIVERSION TO +	D58	1265.	12.33	131.	37.	12.	.95
HYDROGRAPH AT +	RET58	906.	12.50	87.	26.	9.	.95
2 COMBINED AT +	C58	1216.	12.50	216.	63.	21.	1.93
HYDROGRAPH AT +	46B	400.	12.42	65.	21.	7.	.36
DIVERSION TO +	D46B	12.	9.33	8.	3.	1.	.36
HYDROGRAPH AT +	RET46B	400.	12.42	65.	19.	6.	.36
ROUTED TO +	CAP6	290.	12.58	65.	19.	6.	.36

+	ROUTED TO RCAP6	285.	12.67	65.	19.	6.	.36
+	ROUTED TO RCAP6B	285.	12.67	65.	19.	6.	.36
+	HYDROGRAPH AT 29A	216.	12.25	26.	8.	3.	.18
+	DIVERSION TO D29A	216.	12.25	17.	5.	2.	.18
+	HYDROGRAPH AT RET29A	158.	12.42	12.	3.	1.	.18
+	2 COMBINED AT C29A	389.	12.42	76.	22.	7.	.54
+	DIVERSION TO 29A-W	0.	.00	0.	0.	0.	.54
+	HYDROGRAPH AT 29A-S	389.	12.42	76.	22.	7.	.54
+	ROUTED TO 29ATB	380.	12.50	76.	22.	7.	.54
+	HYDROGRAPH AT 45A	409.	12.67	74.	22.	7.	.62
+	DIVERSION TO D45A	409.	12.67	45.	12.	4.	.62
+	HYDROGRAPH AT RET45A	347.	12.83	35.	10.	3.	.62
+	DIVERSION TO 45ATB	329.	12.83	33.	9.	3.	.62
+	HYDROGRAPH AT D45A	17.	12.83	2.	0.	0.	.62
+	HYDROGRAPH AT 55B	1030.	13.00	263.	82.	27.	1.86
+	DIVERSION TO D55B	1030.	13.00	168.	46.	15.	1.86
+	HYDROGRAPH AT RET55B	761.	13.33	124.	36.	12.	1.86
+	2 COMBINED AT C55B	762.	13.33	123.	35.	12.	2.48
+	ROUTED TO CAP7	527.	13.67	123.	35.	12.	2.48
+	ROUTED TO RCAP7	522.	14.00	123.	35.	12.	2.48
+	HYDROGRAPH AT 29B	89.	12.25	9.	3.	1.	.08
+	DIVERSION TO D29B	89.	12.25	9.	3.	1.	.08
+	HYDROGRAPH AT RET29B	1.	18.58	0.	0.	0.	.08
+	2 COMBINED AT C29B1	522.	14.00	123.	36.	12.	2.56

	2 COMBINED AT						
+		C29B2	551.	13.92	186.	57.	19.	3.10
	ROUTED TO						
+		29BTC	551.	14.00	186.	57.	19.	3.10
	HYDROGRAPH AT						
+		RD45A	329.	12.83	33.	9.	3.	.62
	ROUTED TO						
+		45ATB	217.	13.67	32.	9.	3.	.62
	HYDROGRAPH AT						
+		45B	708.	12.50	128.	41.	14.	.66
	DIVERSION TO						
+		D45B	338.	12.08	39.	12.	4.	.66
	HYDROGRAPH AT						
+		RET45B	708.	12.50	105.	29.	10.	.66
	2 COMBINED AT						
+		C45B	708.	12.50	135.	38.	13.	.66
	ROUTED TO						
+		CAP8	479.	12.75	135.	38.	13.	.66
	ROUTED TO						
+		RCAP8	461.	13.25	134.	38.	13.	.66
	HYDROGRAPH AT						
+		29C	278.	12.33	38.	12.	4.	.23
	DIVERSION TO						
+		D29C	278.	12.33	32.	9.	3.	.23
	HYDROGRAPH AT						
+		RET29C	88.	12.75	10.	3.	1.	.23
	2 COMBINED AT						
+		C29C1	482.	13.17	144.	41.	14.	.89
	2 COMBINED AT						
+		C29C2	787.	13.83	318.	95.	32.	3.99
	ROUTED TO						
+		29CT36	787.	13.92	318.	95.	32.	3.99
	HYDROGRAPH AT						
+		55	253.	12.08	21.	6.	2.	.14
	DIVERSION TO						
+		D55	253.	12.08	17.	5.	2.	.14
	HYDROGRAPH AT						
+		RET55	116.	12.25	6.	2.	1.	.14
	ROUTED TO						
+		CAP9	43.	12.42	6.	2.	1.	.14
	ROUTED TO						
+		RCAP9	38.	12.75	6.	2.	1.	.14
	HYDROGRAPH AT						
+		29D	643.	12.50	114.	36.	12.	.65
	DIVERSION TO						
+		D29D	460.	12.25	46.	14.	5.	.65
	HYDROGRAPH AT						

+	RET29D	643.	12.50	82.	23.	8.	.65
ROUTED TO +	29T36	459.	13.17	79.	23.	8.	.65
HYDROGRAPH AT +	36C	842.	12.08	106.	36.	12.	.44
DIVERSION TO +	D36C	842.	12.08	66.	19.	6.	.44
HYDROGRAPH AT +	RET36C	649.	12.17	58.	17.	6.	.44
4 COMBINED AT +	C36	1177.	13.17	446.	133.	44.	5.22
ROUTED TO +	36T37	1156.	13.25	445.	133.	44.	5.22
HYDROGRAPH AT +	29AWST	0.	.00	0.	0.	0.	.54
HYDROGRAPH AT +	30	950.	12.58	190.	62.	21.	1.12
DIVERSION TO +	D30	70.	11.42	31.	11.	4.	1.12
HYDROGRAPH AT +	RET30	950.	12.58	184.	51.	17.	1.12
2 COMBINED AT +	C30	950.	12.58	184.	51.	17.	1.12
ROUTED TO +	30T37	917.	12.75	184.	51.	17.	1.12
HYDROGRAPH AT +	37	898.	12.08	109.	38.	13.	.47
DIVERSION TO +	D37	761.	12.00	65.	19.	6.	.47
HYDROGRAPH AT +	RET37	840.	12.17	62.	18.	6.	.47
3 COMBINED AT +	C37	1634.	13.17	655.	195.	65.	6.81
ROUTED TO +	ADOTEL	17.	25.67	17.	17.	17.	6.81
ROUTED TO +	37T38	17.	25.92	17.	17.	17.	6.81
HYDROGRAPH AT +	17A	257.	12.17	30.	10.	3.	.18
DIVERSION TO +	D17A	20.	11.67	6.	2.	1.	.18
HYDROGRAPH AT +	RET17A	257.	12.17	28.	8.	3.	.18
ROUTED TO +	17AT23	256.	12.25	28.	8.	3.	.18
HYDROGRAPH AT +	23	381.	12.17	46.	15.	5.	.28

	DIVERSION TO						
+		D23	231.	12.00	17.	5.	2.	.28
	HYDROGRAPH AT						
+		RET23	381.	12.17	35.	10.	3.	.28
	HYDROGRAPH AT						
+		48	682.	12.42	99.	29.	10.	.77
	DIVERSION TO						
+		D48	615.	12.33	51.	14.	5.	.77
	HYDROGRAPH AT						
+		RET48	678.	12.50	56.	15.	5.	.77
	ROUTED TO						
+		CAP3	576.	12.58	56.	15.	5.	.77
	ROUTED TO						
+		RCAP3A	529.	12.75	56.	15.	5.	.77
	ROUTED TO						
+		RCAP3B	380.	12.92	55.	15.	5.	.77
	HYDROGRAPH AT						
+		17B	319.	12.25	42.	14.	5.	.22
	DIVERSION TO						
+		D17B	17.	11.00	7.	3.	1.	.22
	HYDROGRAPH AT						
+		RET17B	319.	12.25	41.	11.	4.	.22
	2 COMBINED AT						
+		C17B	415.	12.83	94.	27.	9.	.99
	ROUTED TO						
+		17BT22	418.	12.92	94.	27.	9.	.99
	HYDROGRAPH AT						
+		47	929.	12.92	196.	57.	19.	1.67
	DIVERSION TO						
+		D47	929.	12.92	128.	34.	11.	1.67
	HYDROGRAPH AT						
+		RET47	661.	13.17	82.	23.	8.	1.67
	ROUTED TO						
+		CAP4+5	619.	13.25	82.	23.	8.	1.67
	ROUTED TO						
+		RCAP4	416.	14.08	80.	23.	8.	1.67
	HYDROGRAPH AT						
+		22	573.	12.25	74.	24.	8.	.41
	DIVERSION TO						
+		D22	66.	11.67	16.	6.	2.	.41
	HYDROGRAPH AT						
+		RET22	573.	12.25	68.	19.	6.	.41
	2 COMBINED AT						
+		C22A	564.	12.25	142.	41.	14.	2.08
	2 COMBINED AT						
+		C22	876.	12.25	230.	66.	22.	3.07
	ROUTED TO						
+		22T23	662.	12.42	225.	66.	22.	3.07

+	3 COMBINED AT C23	1090.	12.33	283.	82.	27.	3.53
+	ROUTED TO 23T24	1070.	12.42	283.	82.	27.	3.53
+	HYDROGRAPH AT 49	702.	12.42	103.	31.	10.	.79
+	DIVERSION TO D49	632.	12.33	49.	14.	5.	.79
+	HYDROGRAPH AT RET49	699.	12.50	63.	17.	6.	.79
+	ROUTED TO CAP2	637.	12.58	63.	17.	6.	.79
+	ROUTED TO RCAP2	524.	13.00	62.	17.	6.	.79
+	HYDROGRAPH AT 50	370.	12.25	46.	15.	5.	.28
+	DIVERSION TO D50	290.	12.08	23.	7.	2.	.28
+	HYDROGRAPH AT RET50	370.	12.25	29.	8.	3.	.28
+	ROUTED TO CAP1	305.	12.33	29.	11.	7.	.28
+	ROUTED TO RCAP1	227.	12.83	29.	11.	7.	.28
+	HYDROGRAPH AT 18A	1191.	12.33	166.	53.	18.	1.01
+	DIVERSION TO D18A	585.	12.00	54.	17.	6.	1.01
+	HYDROGRAPH AT RET18A	1191.	12.33	132.	37.	12.	1.01
+	3 COMBINED AT C18A	1181.	12.33	217.	63.	24.	2.08
+	ROUTED TO 18T24	931.	12.58	217.	63.	24.	2.08
+	HYDROGRAPH AT 24	374.	12.25	48.	16.	5.	.29
+	DIVERSION TO D24	5.	6.50	4.	1.	0.	.29
+	HYDROGRAPH AT RET24	374.	12.25	48.	15.	5.	.29
+	3 COMBINED AT C24	2194.	12.33	520.	154.	55.	5.90
+	ROUTED TO 24T31A	2164.	12.58	517.	154.	55.	5.90
+	ROUTED TO 24T31B	2157.	12.67	516.	154.	55.	5.90
	HYDROGRAPH AT						

+	31B	500.	12.42	76.	24.	8.	.47
+ DIVERSION TO	D31B	483.	12.33	41.	12.	4.	.47
+ HYDROGRAPH AT	RET31B	458.	12.50	43.	12.	4.	.47
+ 2 COMBINED AT	C31	2421.	12.67	551.	164.	58.	6.37
+ DIVERSION TO	D31W	2121.	12.67	322.	81.	27.	6.37
+ HYDROGRAPH AT	D31	300.	12.50	229.	84.	31.	6.37
+ ROUTED TO	31T38	300.	12.92	228.	84.	31.	6.37
+ HYDROGRAPH AT	31A	639.	12.33	93.	30.	10.	.53
+ DIVERSION TO	D31A	196.	11.92	25.	8.	3.	.53
+ HYDROGRAPH AT	RET31A	639.	12.33	80.	22.	7.	.53
+ ROUTED TO	31AT38	587.	12.58	80.	22.	7.	.53
+ HYDROGRAPH AT	38	619.	12.25	90.	30.	10.	.47
+ DIVERSION TO	D38	139.	11.83	23.	8.	3.	.47
+ HYDROGRAPH AT	RET38	619.	12.25	80.	22.	7.	.47
+ 4 COMBINED AT	C38	1088.	12.58	376.	136.	60.	14.18
+ ROUTED TO	38T39	1087.	12.58	375.	136.	60.	14.18
+ DIVERSION TO	DB10	131.	12.58	6.	1.	0.	14.18
+ HYDROGRAPH AT	ADD10	956.	12.58	369.	135.	59.	14.18
+ DIVERSION TO	DB9	170.	12.58	13.	3.	1.	14.18
+ HYDROGRAPH AT	ADD9	787.	12.58	356.	132.	58.	14.18
+ DIVERSION TO	DB8	175.	12.58	21.	5.	2.	14.18
+ HYDROGRAPH AT	ADD8	612.	12.58	336.	126.	57.	14.18
+ DIVERSION TO	DB7	0.	.00	0.	0.	0.	14.18
+ HYDROGRAPH AT	ADD7	612.	12.58	336.	126.	57.	14.18

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          DIVERSION TO
+                          DB6        0.     .00          0.          0.          0.      14.18

          HYDROGRAPH AT
+                         ADD6      612.   12.58        336.        126.         57.      14.18

          DIVERSION TO
+                          DB5        0.     .00          0.          0.          0.      14.18

          HYDROGRAPH AT
+                         ADD5      612.   12.58        336.        126.         57.      14.18

          HYDROGRAPH AT
+                         D31W     2121.   12.67        322.         81.         27.       6.37

          ROUTED TO
+                       31WT32     1740.   12.83        322.         81.         27.       6.37

          HYDROGRAPH AT
+                           32      417.   12.33         54.         16.          5.        .38

          2 COMBINED AT
+                          C32     2030.   12.83        424.        109.         36.        .38

          ROUTED TO
+                       32T39      1978.   12.83        424.        109.         36.        .38

          HYDROGRAPH AT
+                           39      402.   12.42         62.         20.          7.        .36

          DIVERSION TO
+                          D39       10.    9.00          6.          2.          1.        .36

          HYDROGRAPH AT
+                        RET39      402.   12.42         62.         18.          6.        .36

          3 COMBINED AT
+                          C39     2312.   12.92        709.        225.         89.      14.92

          DIVERSION TO
+                        BASIN      512.   12.92         21.          5.          2.      14.92

          HYDROGRAPH AT
+                         SOSS     1800.   12.83        688.        220.         88.      14.92
1
                                   SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                       (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                        COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT        PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                     PEAK                                     PEAK

                               (MIN)      (CFS)     (MIN)      (IN)     (MIN)     (CFS)     (MIN)       (IN)

         FOR STORM = 1  STORM AREA (SQ MI) =        .01
           RCAP11  MANE         1.81   1422.59    753.61      2.58      5.00   1414.43    750.00       2.58

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1458E+03 EXCESS= .0000E+00 OUTFLOW= .1459E+03 BASIN STORAGE= .9582E-05
PERCENT ERROR=   -.1

         FOR STORM = 2  STORM AREA (SQ MI) =       1.00
           RCAP11  MANE         1.81   1413.94    753.57      2.57      5.00   1405.84    750.00       2.57

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1451E+03 EXCESS= .0000E+00 OUTFLOW= .1453E+03 BASIN STORAGE= .8615E-05
PERCENT ERROR=   -.1

         FOR STORM = 3  STORM AREA (SQ MI) =       5.00
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          RCAP11  MANE        1.74   1375.88    752.42      2.51      5.00   1367.07    750.00        2.51

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1415E+03 EXCESS= .0000E+00 OUTFLOW= .1417E+03 BASIN STORAGE= .8840E-05
PERCENT ERROR=   -.1

         FOR STORM = 4  STORM AREA (SQ MI) =      10.00
          RCAP11  MANE        1.83   1327.99    752.94      2.43      5.00   1319.08    750.00        2.43

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1370E+03 EXCESS= .0000E+00 OUTFLOW= .1372E+03 BASIN STORAGE= .1311E-04
PERCENT ERROR=   -.1

         FOR STORM = 5  STORM AREA (SQ MI) =      30.00
          RCAP11  MANE        1.82   1267.81    753.09      2.33      5.00   1256.72    750.00        2.34

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1318E+03 EXCESS= .0000E+00 OUTFLOW= .1320E+03 BASIN STORAGE= .1164E-04
PERCENT ERROR=   -.1

         FOR STORM = 6  STORM AREA (SQ MI) =      60.00
          RCAP11  MANE        1.92   1203.51    752.68      2.23      5.00   1193.15    750.00        2.23

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1261E+03 EXCESS= .0000E+00 OUTFLOW= .1263E+03 BASIN STORAGE= .1087E-04
PERCENT ERROR=   -.1

         FOR STORM = 7  STORM AREA (SQ MI) =      90.00
          RCAP11  MANE        1.80   1181.65    752.29      2.20      5.00   1170.52    750.00        2.20

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1243E+03 BASIN STORAGE= .1080E-04
PERCENT ERROR=   -.1


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


   -----DSS---ZCLOSE Unit:  71,   File: FUTN.DSS
            Pointer Utilization:    .25
            Number of Records:      25
            File Size:     53.2  Kbytes
            Percent Inactive:     .0
```

APPENDIX E-2

NORTHWEST MESA AREA
100-YEAR, 24-HOUR STORM
FUTURE LAND USE CONDITIONS
HEC-1 MODEL

```
1****************************************
□
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  12/11/1997  TIME  07:54:01 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
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

1

HEC-1 INPUT

PAGE 1

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

  1           ID
  2           ID   ALL HYDROGRAPHS ENTERING THE EMF ARE SENT TO TAPE 21
  3           ID
  4           ID   AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROADS TO THE EAST
  5           ID   ALL THE HYDROGRAPHS ENTERING INTO THE EMF ARE SENT TO TAPE 21
  6           ID
  7           ID   ALL STREET ROUTINGS HAVE N VALUES OF .015 FOR ASPHALT AND .03 FOR OVERLAND
  8           ID   FLOWS
  9           ID
 10           ID   EAST MARICOPA COUNTY AREA DRAINAGE MASTER STUDY - PHASE 2
 11           ID   THIS AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROAD TO THE
 12           ID   EAST, MCDOWELL ROAD TO THE NORTH AND THE SUPERSTITION FREEWAY TO THE SOUTH
 13           ID
 14           ID   FILENAME: FUTPHASE.DAT
 15           ID   FILE LOCATION: C:\DAVE\SEMAG97
 16           ID
 17           ID   DDMS FILE FAMILY NAME: FUTPHASE
 18           ID   FILE FAMILY LOCATION:  C:\DAVE\SEMAG97
 19           ID
 20           ID   THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
 21           ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 18.60 SQ. MI.
 22           ID   THIS MODEL USES THE REVISED LAND USE AND A Kn VALUE OF 0.09 FOR DESERT LAND
 23           ID   USES
 24           ID
 25           ID   THIS MODEL WAS REVISED TO ESTABLISH CONCENTRATION POINTS AND HYDROGRAPHS
 26           ID   ENTERING INTO THE EMF.
 27           ID   INITIAL REVISION IN MARCH 1997
```

```
 28          ID
 29          ID   100-YEAR 24-HOUR FREQUENCY
 30          ID
 31          ID   METHODOLOGY:
 32          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
 33          ID   SCS TYPE II RAINFALL DISTRIBUTION
 34          ID   S-GRAPH HYDROGRAPH
 35          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 36          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 37          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 38          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
 39          ID   DATED 1994
 40          ID   THE NOAA TECHNICAL MEMORANDUM NWS HYDRO-40 DEPTH AREA RATIOS
 41          ID
 42          ID   STUDY INITIALLY PERFORMED BY LISA C. YOUNG
 43          ID   REVISED BY VALERIE A. SWICK
 44          ID   HYDROLOGY BRANCH, ENGINEERING DISTRICT,
 45          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, SPRING 1996
 46          ID
 47          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL
 48          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL,  5FT/SEC FOR CONCRETE CHANNEL
 49          ID
 50          ID   THIS MODEL DOES NOT REFLECT THE STORM DRAINS IN THE AREA AS THEY HAVE A LOW
 51          ID   CAPACITY AND OUTLET AT THE SAME LOCATION AS SURFACE FLOW
 52          ID
 53          ID
 54          ID     ********************************************************************
 55          ID     * THIS FUTURE CONDITIONS MODEL MUST USE USE THE DSS FILE FROM THE   *
```



```
                                  HEC-1 INPUT

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

 56          ID     * FUTNORTH MODEL (FUTNORTH.DSS) BECAUSE THERE IS A SPLIT FLOW AT    *
 57          ID     * BROADWAY AND HAWES ROADS.  THIS IS MODELED AS A 50/50 SPLIT, IF   *
 58          ID     * IT WILL ACTUALLY OCCUR IN THE FUTURE IS NOT KNOWN. THIS FLOW IS   *
 59          ID     * BROUGHT INTO THE MODEL AT SUBBASIN 25 WHICH IS WEST OF HAWES ROAD *
 60          ID     ********************************************************************
 61          ID
 62          ID     ********************************************************************
 63          ID     * RETENTION VOLUME WERE OBTAINED BY USE OF THE 100-YR 2-HR MODEL.   *
 64          ID     * BASINS WITH OLDER DEVELOPMENT WILL NOT HAVE 100% OF THIS VOLUME   *
 65          ID     * AS RETENTION, BUT INSTEAD WILL HAVE A PERCENTAGE BASED UPON THE   *
 66          ID     * AMOUNT THAT CAN BE DEVELOPED IN THE FUTURE. THIS WAS BASED UPON   *
 67          ID     * EXAMINATION OF AERIAL PHOTOS AND FIELD OBSERVATION.               *
 68          ID     * 100% OF THE VOLUME FROM THE 100-YR 2-HR MODEL IS TERMED ULTIMATE  *
 69          ID     ********************************************************************
 70          ID
 71          ID
 72          ID     LAST UPDATED ON 11/19/97
 73          ID
 74          ID
 75          ID   DDM MCUHP2 Phase 2 model, north of Superstition Freeway
             *DIAGRAM
 76          IT       5  1APR97    0000     300
 77          IO       5
 78          IN      15
 79          JD    3.60    0.01
 80          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 81          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 82          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 83          PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
 84          PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
 85          PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
 86          PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
 87          PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
 88          PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
 89          PC    .984    .987    .990    .993    .996    .999   1.000
 90          JD    3.58       1
 91          JD    3.49       5
 92          JD    3.38    10.0
```

```
 93          JD    3.24    30.0
 94          JD    3.10    60.0
 95          JD    3.05    90.0
             *
             * DDM   ***** Updated *****

 96          KK       9
 97          KM   BASIN 9
 98          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 99          KM    L=      1.6  Lca=       .8   S=   11.2  Kn= .031  LAG=  31.0
100          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
101          BA     .44
102          LG     .10     .25    4.80     .43   78.00
103          UI     48.    114.    220.    284.    365.    548.    509.    388.    301.    228.
104          UI    136.     82.     61.     43.     15.     15.     15.     15.      0.      0.
105          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  3

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

106          KK      D9
107          KM   RETAIN THE 100-YR 2-HR RUNOFF VOLUME. 100% OF VOLUME IS USED
108          DT    RET9      54
109          DI       0   10000
110          DQ       0   10000
             *
             * DDM   ***** Updated *****

111          KK       4
112          KM   BASIN 4
113          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
114          KM    L=      1.7  Lca=      1.2   S=   23.5  Kn= .030  LAG=  31.1
115          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
116          BA    1.00
117          LG     .15     .25    4.80     .39   55.00
118          UI    108.    257.    499.    642.    824.   1239.   1163.    886.    688.    525.
119          UI    318.    186.    141.    101.     33.     33.     33.     33.      0.      0.
120          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

121          KK     4T8
122          KM   ROUTE FLOWS FROM S4 TO S8
123          KM   VIA GREENFIELD ROAD
124          KM   ADJUST SLOPE FROM .0023 TO .0043 TO SIMULATE A VELOCITY OF 3 FT/SEC
125          RS       4    FLOW      -1
126          RC   0.030    .015   0.030    4000   .0043
127          RX       0    1009    1021    1021    1089    1089    1105    1144
128          RY     1.7     0.7     0.5       0       0     0.5     0.7     1.7
             * DDM   ***** Updated *****

129          KK       8
130          KM   BASIN 8
131          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
132          KM    L=      1.5  Lca=       .9   S=   34.9  Kn= .021  LAG=  17.7
133          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
134          BA     .50
135          LG     .11     .25    4.90     .41   79.00
136          UI    135.    452.    715.   1073.    705.    428.    178.     95.     29.     29.
137          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
138          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

139          KK      D8
140          KM    RETAIN 100-YR 2-HR RUNOFF VOLUME. 65% OF ULTIMATE IS USED BECAUSE 65% OF
141          KM    BASIN CAN BE DEVELOPED IN FUTURE
```

```
 142          DT    RET8      39
 143          DI       0   10000
 144          DQ       0   10000
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  4

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

 145          KK      C8
 146          KM   COMBINE FLOWS FROM S8 AND S4
 147          KM   CONCENTRATION OF FLOWS AT GREENFIELD ROAD AND MCLELLEN ROAD.
 148          KM   FLOWS WILL NOT BE ROUTED TO C9 BECAUSE OF THE SHORT DISTANCE.  FLOWS WILL
 149          KM   ASSUMED TO BE AT C9
 150          HC       2
              * DDM   ***** Preserved *****

 151          KK  EMFHOB
 152          KM   COMBINE FLOWS FROM C8 AND S9
 153          KM   AT GREENFIELD ROAD AND RWCD (APPROXIMATELY HOBART DRIVE)
 154          KO                                      21
 155          HC       2
              * ZW A=HOBART ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
              *
              * DDM   ***** Preserved *****

 156          KK   C9T15
 157          KM   ROUTE FLOWS FROM C9 TO 15A (AT THE COLBY STREET ALIGNMENT) VIA EMF
 158          KM   SLOPE ADJUSTED FROM .0001 TO .003 TO SIMULATE A VELOCITY OF 5 FT/SEC
              * KO     3
 159          RS       2    FLOW      -1
 160          RC   0.030   0.030   0.030    2000   0.003
 161          RX       0      10      20      50     130     160     170     180
 162          RY      10      10      10       0       0      10      10      10
              *
              * DDM   ***** Updated *****

 163          KK       3
 164          KM   BASIN 3
 165          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 166          KM    L=      1.8  Lca=      1.3   S=   36.1  Kn= .060  LAG=  60.4
 167          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 168          BA    1.00
 169          LG     .21     .25    5.30     .31   30.00
 170          UI     56.     56.     84.    194.    242.    284.    319.    359.    411.    474.
 171          UI    610.    722.    606.    518.    458.    406.    353.    309.    269.    225.
 172          UI    158.     98.     95.     91.     64.     56.     56.     17.     17.     17.
 173          UI     17.     17.     17.     17.     17.     17.      0.      0.      0.      0.
 174          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 175          KK      D3
 176          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME FROM SUBBASIN 3. 100% OF ULTIMATE
 177          DT    RET3      90
 178          DI       0   10000
 179          DQ       0   10000
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  5

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

 180          KK     3T7
 181          KM   ROUTE FLOWS FROM S3 TO S7
 182          KM   VIA HIGLEY ROAD
 183          KM   SLOPE ADJUSTED FROM .0023 TO .0083 TO SIMULATE A VELOCITY OF 3 FT/SEC
```

```
184          RS       3    FLOW      -1
185          RC   0.030    .015   0.030    2600    .0083
186          RX       0    1009    1021    1021    1089    1089    1105    2144
187          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             * DDM   ***** Updated *****

188          KK       7
189          KM   BASIN 7
190          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
191          KM    L=      1.1  Lca=       .5   S=   52.7  Kn= .052  LAG=  28.1
192          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
193          BA     .28
194          LG     .20     .25    5.40     .29   40.00
195          UI     33.     92.    166.    215.    303.    393.    290.    221.    165.     96.
196          UI     56.     39.     23.     10.     10.     10.      0.      0.      0.      0.
197          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

198          KK      D7
199          KM    RETAIN 100-YR 2-HR RUNOFF VOLUME. 100% OF ULTIMATE WILL BE USED BECAUSE THE
200          KM    BASIN IN ALTA MESA
201          DT    RET7      27
202          DI       0   10000
203          DQ       0   10000
             *
             * DDM   ***** Preserved *****

204          KK      C7
205          KM   COMBINE FLOWS FROM S3 AND S7
206          KM    CONCENTRATION OF FLOWS AT MCLELLEN ROAD AND HIGLEY ROAD.
207          HC       2
             *
             * DDM   ***** Preserved *****

208          KK    7T10
209          KM   ROUTE FLOWS FROM C7 TO S10
210          KM   VIA HIGLEY ROAD
211          KM   THE SLOPE OF THE STREET WAS ADJUSTED FROM .0023 TO .0003 TO SIMULATE THE
212          KM    CORRECT VELOCITY OF FLOWS (3 FT/SEC)
213          RS       3    FLOW      -1
214          RC   0.030    .015   0.030    2680    .004
215          RX       0    1009    1021    1021    1089    1089    1105    2144
216          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             * DDM   ***** Updated *****
```



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

217          KK      10
218          KM   BASIN 10
219          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
220          KM    L=      1.3  Lca=       .8   S=   53.8  Kn= .061  LAG=  41.8
221          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
222          BA     .72
223          LG     .21     .25    4.70     .41   25.00
224          UI     58.     68.    207.    282.    334.    399.    491.    693.    665.    526.
225          UI    444.    364.    299.    230.    136.    100.     87.     58.     46.     18.
226          UI     18.     18.     18.     18.      0.      0.      0.      0.      0.      0.
227          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

228          KK     D10
229          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME FROM BASIN 10. 100% OF ULTIMATE IS USED
230          KM   BECAUSE BASIN IS ALTA MESA
231          DT   RET10      57
232          DI       0   10000
233          DQ       0   10000
```

```
                    *
                    * DDM   ***** Preserved *****

234                 KK     C10
235                 KM   COMBINE FLOWS FROM C7 AND S10
236                 KM   CONCENTRATION OF FLOWS AT BROWN ROAD AND HIGLEY ROAD.
237                 HC       2
                    *
                    * DDM   ***** Preserved *****

238                 KK   10T8A
239                 KM   ROUTE FLOWS FROM C10 TO S8A
240                 KM   VIA BROWN ROAD
241                 RS       5    FLOW      -1
242                 RC   0.030    .015   0.030    1250  0.0076
243                 RX       0    1009    1021    1021    1089    1089    1105    2144
244                 RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
                    * DDM   ***** Updated *****

245                 KK      8a
246                 KM   BASIN 8a
247                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
248                 KM    L=        .6  Lca=        .4   S=   35.0  Kn= .050  LAG=  21.3
249                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
250                 BA     .12
251                 LG     .25     .25    4.70     .38   30.00
252                 UI     20.     78.    117.    184.    201.    136.     91.     42.     25.     13.
253                 UI      6.      6.      0.      0.      0.      0.      0.      0.      0.      0.
254                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE   7

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


255                 KK     D8A
256                 KM   RETAIN 100-YR 2-HR RUNOFF VOLUME. 100% OF ULTIMATE IS USED BECAUSE BASIN CAN
257                 KM   BE FULLY DEVELOPED
258                 DT   RET8A      11
259                 DI       0   10000
260                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

261                 KK     C8A
262                 KM   COMBINE FLOWS FROM C10 AND S8A
263                 KM    CONCENTRATION OF FLOWS AT BROWN ROAD AND ROSEMONT.
264                 HC       2
                    *
                    * DDM   ***** Preserved *****

265                 KK  8AT15A
266                 KM   ROUTE FLOWS FROM C8A TO S15A
267                 KM   VIA BROWN ROAD
268                 KM   SLOPE WAS ADJUSTED TO SIMULATE A VELOCITY OF 3 FT/SEC
269                 RS       3    FLOW      -1
270                 RC   0.030    .013   0.030    30000.004225
271                 RX       0    1009    1021    1021    1089    1089    1105    2144
272                 RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
                    * DDM   ***** Updated *****

273                 KK     15a
274                 KM   BASIN 15a
275                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
276                 KM    L=       1.0  Lca=        .7   S=   33.0  Kn= .053  LAG=  34.3
277                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
278                 BA     .35
279                 LG     .24     .25    4.90     .35   28.00
280                 UI     35.     68.    147.    191.    237.    312.    429.    337.    270.    214.
```

```
281          UI    167.    108.     60.     51.     35.     19.     11.     11.     11.     11.
282          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
283          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

284          KK    D15A
285          KM   RETAIN 100-YR 2-HR RUNOFF VOLUME. 50% OF ULTIMATE IS USED BECAUSE 50% OF
286          KM   BASIN IS OLDER DEVELOPMENT
287          DT  RET15A      13
288          DI       0   10000
289          DQ       0   10000
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE  8

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


290          KK    C15A
291          KM   COMBINE FLOWS FROM C8A AND S15A
292          KM   CONCENTRATION BEFORE ENTERING INTO THE EMF AT BROWN ROAD.
293          KO                                      21
294          HC       2
             * ZW A=BROWN ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

295          KK  EMFBRN
296          KM   COMBINE FLOW FROM C9 AND C15AI
297          KM   CONCENTRATION OF FLOWS IN THE EMF AT BROWN ROAD
298          HC       2
             *
             * DDM   ***** Preserved *****

299          KK  15AT15
300          KM   ROUTE FLOWS FROM THE EMF AT BROWN ROAD TO COLBY ROAD.
301          KM   VIA THE EMF
302          KM   THE SLOPE WOULD NOT CONVERGE TO SIMULATE A VELOCITY OF 5 FT/SEC
303          KM    A TIME DIFFERENCE OF .84 HOURS WAS THE CLOSEST I COULD GET WHILE STILL
304          KM    HAVING A TIME DIFFERENCE.  A SLOPE OF .005 RESULTED IN A VELOCITY OF
305          KM    1.5 FT/SEC.  ANY STEEPER SLOPE WOULD RESULT IN A HYDROGRAPH TRANSLATION
306          KM    WITH NO TIME DIFFERENCE.
             * KO     3
307          RS       3    FLOW      -1
308          RC    0.03    0.03    0.03    4500    .0050
309          RX       0      10      20      50     130     160     170     180
310          RY      10      10      10       0       0      10      10      10
             * DDM   ***** Updated *****

311          KK     15b
312          KM   BASIN 15b
313          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
314          KM    L=      1.6  Lca=       .4   S=   21.6  Kn= .053  LAG=  37.1
315          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
316          BA     .51
317          LG     .23     .25    4.70     .39   30.00
318          UI     46.     77.    184.    243.    294.    364.    521.    539.    414.    340.
319          UI    272.    216.    140.     81.     73.     46.     33.     14.     14.     14.
320          UI     14.     14.      0.      0.      0.      0.      0.      0.      0.      0.
321          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

322          KK    D15B
323          KM   RETAIN THE 100-YR 2-HR RUNOFF VOLUME. 50% OF ULTIMATE IS USED BECAUSE 50%
324          KM   OF BASIN IS OLDER DEVELOPMENT.
325          DT  RET15B      20
326          DI       0   10000
327          DQ       0   10000
```

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                    *
                    * DDM    ***** Preserved *****
                                                    HEC-1 INPUT

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

 328                KK  EMFCLB
 329                KM   COMBINE FLOWS FROM S15, C8A AND C15A
 330                KM   CONCENTRATION OF FLOWS WITHIN THE EMF AT COLBY ROAD.
 331                HC       2
                    *
                    * DDM    ***** Preserved *****

 332                KK   15T16
 333                KM   ROUTE FLOWS FROM C15 (AT COLBE ROAD) TO S16 (AT UNIVERSITY DRIVE)
 334                KM   VIA EMF
                    * KO     3
 335                RS       1    FLOW      -1
 336                RC   0.030   0.030   0.030    1200  0.0005
 337                RX       0      10      20      50     130     160     170     180
 338                RY      10      10      10       0       0      10      10      10
                    *
                    * DDM    ***** Updated *****

 339                KK       1
 340                KM   BASIN 1
 341                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 342                KM    L=        .9  Lca=        .3   S=   55.6  Kn= .080  LAG=  32.6
 343                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 344                BA     .39
 345                LG     .17     .28    4.40     .41   24.00
 346                UI     40.     88.    179.    232.    292.    411.    481.    358.    285.    221.
 347                UI    160.     86.     67.     42.     29.     12.     12.     12.     12.      0.
 348                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 349                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM    ***** Preserved *****

 350                KK      D1
 351                KM   RETAIN 100-YR 2-HR RUNOFF VOLUME. 100% OF ULTIMATE WILL BE USED BECAUSE BASIN
 352                KM   CAN BE FULLY DEVELOPED IN THE FUTURE
 353                DT    RET1      40
 354                DI       0   10000
 355                DQ       0   10000
                    *
                    * DDM    ***** Preserved *****

 356                KK     D1S
 357                KM   DIVERT FLOWS TO S6
 358                KM   FLOW SPLIT AT INTERSECTION OF MCKELLIPS AND BUSH HWY, WITH THE MAJORITY OF
 359                KM    THE FLOWS HEADING SOUTH TO S5.
 360                DT     D1W
 361                DI       0     150   10000
 362                DQ       0     150     150
                    *
                    * DDM    ***** Preserved *****
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 363                KK     1T5
 364                KM   ROUTE FLOWS FROM S1 TO S5
 365                KM   VIA POWER ROAD
 366                KM   ADJUST THE SLOPE FROM .0085 TO .0020 TO SIMULATE A VELOCITY OF 3 FT/SEC
 367                RS       6    FLOW      -1
 368                RC    0.03   0.015    0.03    5280   0.005
 369                RX       0    1005    1012    1012    1080    1080    1087    2096
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370          RY       1       .5       .5       0       0       .5       .5       1
             *
             * DDM   ***** Updated *****

371          KK       5
372          KM   BASIN 5
373          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
374          KM    L=      1.3  Lca=       .8   S=   73.1  Kn= .058  LAG=  37.5
375          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
376          BA     .95
377          LG     .25     .25    4.10     .56   28.00
378          UI     85.    139.    336.    444.    535.    661.    933.   1018.    777.    641.
379          UI    515.    413.    280.    153.    140.     88.     72.     26.     26.     26.
380          UI     26.     26.      0.      0.      0.      0.      0.      0.      0.      0.
381          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

382          KK      D5
383          KM    RETAIN 100-YR 2-HR RUNOFF VOLUME. 40% OF ULTIMATE IS USED BECAUSE 40% OF
384          KM    BASIN CAN BE DEVELOPED IN FUTURE AND WILL HAVE RETENTION
385          DT    RET5      28
386          DI       0   10000
387          DQ       0   10000
             *
             * DDM   ***** Preserved *****

388          KK      C5
389          KM   COMBINE FLOWS FROM S1 AND S5
390          KM   CONCENTRATION OF FLOWS AT BROWN ROAD AND BUSH HIGHWAY.
391          KM   AREA IS ADJUSTED TO SHOW THE ASSIGNED AREA FOR THE DIVERSION OF D1.
392          HC       2    1.15
             *
             * DDM   ***** Preserved *****

393          KK     DC5
394          KM   DIVERT FLOWS TO S12
395          KM   MAIN FLOWS HEAD WEST ALONG BROWN ROAD TO RECKER ROAD, THE DIVERTED FLOWS HEAD
396          KM   SOUTH ALONG BUSH HIGHWAY TO UNIVERSITY DRIVE.
397          DT     D5S
398          DI       0     350   10000
399          DQ       0     350     350
             *
             * DDM   ***** Preserved *****
```



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

400          KK     5T6
401          KM   ROUTE FLOWS FROM C5 TO S6
402          KM   VIA BROWN ROAD
403          KM   ADJUST SLOPE FROM .0091 TO .0051 TO SIMULATE A VELOCITY OF 3 FT/SEC
404          RS       6    FLOW      -1
405          RC   0.030    .015   0.030    5280  0.0051
406          RX       0    1009    1021    1021    1089    1089    1105    2144
407          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****

408          KK       2
409          KM   BASIN 2
410          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
411          KM    L=      1.5  Lca=      1.0   S=   65.3  Kn= .070  LAG=  53.2
412          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
413          BA    1.00
414          LG     .20     .25    4.55     .46   26.00
415          UI     63.     63.    143.    244.    306.    353.    401.    467.    559.    745.
416          UI    776.    627.    539.    473.    402.    346.    298.    219.    145.    111.
417          UI    104.     77.     63.     54.     19.     19.     19.     19.     19.     19.
```

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418          UI     19.      0.      0.      0.      0.      0.      0.      0.      0.      0.
419          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

420          KK      D2
421          KM   RETAIN THE 100-YR 2-HR RUNOFF VOLUME. 100% OF ULTIMATE WILL BE USED BECAUSE
422          KM   PAINTED MOUNTAIN IS A LARGE SCALE DEVELOPMENT AND HAS 100-YR 2-YR POLICY
423          DT    RET2      76
424          DI       0   10000
425          DQ       0   10000
             *
             * DDM   ***** Preserved *****

426          KK     2T6
427          KM   ROUTE FLOWS FROM S2 TO S6
428          KM   VIA RECKER ROAD
429          KM   SLOPE WAS ADJUSTED FROM .0049 TP .0079 TO SIMULATE A VELOCITY OF 3 FT/SEC
430          RS       6    FLOW      -1
431          RC   0.030    .015   0.030    5280  0.0079
432          RX       0    1009    1021    1021    1089    1089    1105    2144
433          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****

434          KK       6
435          KM   BASIN 6
436          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
437          KM    L=      1.6  Lca=      1.0   S=   59.4  Kn= .050  LAG=  39.6
438          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
439          BA    1.00
440          LG     .24     .25    4.40     .47   31.00
441          UI     85.    120.    319.    426.    510.    619.    816.   1063.    861.    704.
1                                          HEC-1 INPUT
PAGE 12

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

442          UI    578.    470.    375.    231.    148.    134.     85.     68.     26.     26.
443          UI     26.     26.     26.      0.      0.      0.      0.      0.      0.      0.
444          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

445          KK      D6
446          KM   RETAIN 100-YR 2-HR RUNOFF VOLUME. 40% OF ULTIMATE IS USED BECAUSE AT LEAST
447          KM   40% OF BASIN IS DEVELOPMENT THAT IS SOMEWHAT NEW
448          DT    RET6      31
449          DI       0   10000
450          DQ       0   10000
             *
             * DDM   ***** Preserved *****

451          KK     GD1
452          KM   RETRIEVE FLOWS DIVERTED AT D1, FROM MCKELLIPS ROAD AND BUSH HIGHWAY.
453          DR     D1W
             *
             * DDM   ***** Preserved *****

454          KK   RGD1A
455          KM   ROUTE FLOWS FROM S1 THROUGH SUBBASIN 6 TO RECKER ROAD AND BROWN ROAD
456          KM   VIA ROADS
457          KM   SLOPE WAS ADJUSTED FROM .006 TP .0195 TO SIMULATE VELOCITY OF 3 FT/SEC
458          RS       7    FLOW      -1
459          RC   0.030   0.015   0.030    6000  0.0195
460          RX       0    1005    1009    1009    1041    1041    1044    2049
461          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Preserved *****

462          KK   RGD1B
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463          KM   ROUTE FLOWS FROM S1 TO S6
464          KM   VIA RECKER ROAD
465          RS       3    FLOW      -1
466          RC   0.030    .015   0.030    2500  0.0025
467          RX       0    1009    1021    1021    1089    1089    1105    2144
468          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Preserved *****

469          KK      C6
470          KM   COMBINE FLOWS FROM S1, S2, S5 AND S6
471          KM   CONCENTRATION OF FLOWS AT RECKER ROAD AND BROWN ROAD.
472          HC       4    2.76
             *
             * DDM   ***** Preserved *****

473          KK     DC6
474          KM   DIVERT FLOWS FROM C6 TO S14
475          KM   MAIN FLOWS HEAD THROUGH SUBBASIN 14 TO HIGLEY ROAD AND UNIVERSITY DRIVE,
476          KM   DIVERTED FLOWS HEAD SOUTH ALONG RECKER ROAD TO UNIVERSITY DRIVE.
477          DT     D6W
478          DI       0     400   10000
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

479          DQ       0     400     400
             *
             * DDM   ***** Preserved *****

480          KK   6T13B
481          KM   ROUTE FLOWS FROM C6 (RECKER RD AND BROWN RD) TO S13 (RECKER AND UNIVERSITY)
482          KM   VIA RECKER ROAD
483          KM   SLOPE ADJUSTED FROM .0049 TO .0089 TO SIMULATE A VELOCITY OF 3 FT/SEC
484          RS       3    FLOW      -1
485          RC   0.030    .015   0.030    2640  0.0089
486          RX       0    1009    1021    1021    1089    1089    1105    2144
487          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****

488          KK      11
489          KM   BASIN 11
490          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
491          KM    L=      2.1  Lca=      1.5   S=   57.4  Kn= .063  LAG=  65.2
492          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
493          BA    1.06
494          LG     .19     .25    4.15     .59   33.00
495          UI     55.     55.     55.    182.    222.    262.    299.    328.    370.    417.
496          UI    491.    620.    707.    593.    511.    456.    412.    359.    320.    277.
497          UI    246.    188.    135.     96.     92.     90.     60.     55.     55.     23.
498          UI     17.     17.     17.     17.     17.     17.     17.     17.      0.      0.
499          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *
             * DDM   ***** Preserved *****

500          KK     D11
501          KM   DIVERT FLOWS TO S19
502          KM   MAIN FLOWS HEAD WEST ALONG UNIVERSITY DRIVE TO BUSH HIGHWAY
503          KM   DIVERTED FLOWS HEAD SOUTH WITHIN A WASH THROUGH SUBBASIN 19, TO POWER ROAD
504          KM   AND APACHE TRAIL.
505          DT    D11S
506          DI       0     250   10000
507          DQ       0     250     250
             *
             * DDM   ***** Preserved *****

508          KK   11T12
509          KM   ROUTE FLOWS FROM S11 TO S12
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510          KM   VIA UNIVERSITY DRIVE
511          KM   SLOPE ADJUSTED FROM .0076 TO .0036 TO SIMULATE 3 FT/SEC
512          RS       3    FLOW      -1
513          RC   0.030    .015   0.030    2640  0.0036
514          RX       0    1009    1021    1021    1089    1089    1105    2144
515          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****
```



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                                          HEC-1 INPUT

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

516          KK      12
517          KM   BASIN 12
518          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
519          KM    L=      1.8  Lca=       .8   S=   77.8  Kn= .079  LAG=  57.1
520          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
521          BA    1.03
522          LG     .13     .25    4.00     .70   39.00
523          UI     61.     61.    113.    219.    280.    324.    363.    417.    476.    594.
524          UI    768.    708.    588.    513.    455.    390.    340.    294.    238.    163.
525          UI    108.    102.     96.     61.     61.     41.     19.     19.     19.     19.
526          UI     19.     19.     19.     19.      0.      0.      0.      0.      0.      0.
527          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

528          KK     D12
529          KM   RETAIN 100-YR 2-HR RUNOFF VOLUME. 20% OF ULTIMATE IS USED: 80% PREVIOUSLY
530          KM    OLDER DEVELOPMENT
531          DT   RET12      16
532          DI       0   10000
533          DQ       0   10000
             * DDM   ***** Preserved *****

534          KK    GD5S
535          KM   RETRIEVE DIVERTED FLOWS FROM D5S
536          DR     D5S
             *
             * DDM   ***** Preserved *****

537          KK   RGD5A
538          KM   ROUTE FLOWS TO S12
539          KM   VIA POWER ROAD
540          KM   SLOPED ADJUSTED FROM .0085 TO .0226 TO SIMULATE A VELOCITY OF 3 FT/SEC
541          RS       6    FLOW      -1
542          RC    0.03   0.015    0.03    5280  0.0226
543          RX       0    1005    1012    1012    1080    1080    1087    2096
544          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Preserved *****

545          KK     C12
546          KM   COMBINE FLOWS FROM S11, S12 AND D5
547          KM   CONCENTRATION OF FLOWS AT BUSH HIGHWAY AND UNIVERSITY DRIVE.
548          HC       3    2.13
             *
             * DDM   ***** Preserved *****

549          KK    DC12
550          KM   DIVERT FLOWS TO S19
551          KM   MAIN FLOWS HEAD WEST ALONG UNIVERSITY DRIVE TO RECKER ROAD.
552          KM   DIVERTED FLOWS HEAD SOUTH ALONG POWER ROAD TO APACHE TRAIL.
553          DT    D12S
554          DI       0     300   10000
555          DQ       0     300     300
             *
             * DDM   ***** Preserved *****
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HEC-1 INPUT

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

 556          KK  12T13A
 557          KM   ROUTE FLOWS FROM C12 TO S13
 558          KM   VIA UNIVERSITY DRIVE
 559          KM   SLOPED ADJUSTED FROM .0186 TO .0106 TO SIMULATE A VELOCITY OF 3 FT/SEC
 560          RS       4    FLOW      -1
 561          RC   0.030    .015   0.030    3800  0.0106
 562          RX       0    1009    1021    1021    1089    1089    1105    2144
 563          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
              * DDM   ***** Updated *****

 564          KK     13a
 565          KM   BASIN 13a
 566          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 567          KM    L=      1.5  Lca=       .9   S=   46.7  Kn= .048  LAG=  37.3
 568          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 569          BA     .77
 570          LG     .23     .25    4.10     .57   36.00
 571          UI     70.    115.    275.    364.    439.    543.    773.    821.    629.    518.
 572          UI    414.    331.    220.    123.    113.     70.     54.     21.     21.     21.
 573          UI     21.     21.      0.      0.      0.      0.      0.      0.      0.      0.
 574          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
              * DDM   ***** Preserved *****

 575          KK    D13A
 576          KM   DIVERT ALL THE FLOWS BUT 7 CFS THAT ARE FLOWING SOUTH FROM THE UNIVERSITY
 577          KM    BASIN
 578          DT   D13AS
 579          DI       0       7      10     100   10000
 580          DQ       0       0       3      93    9993
              *
              * DDM   ***** Preserved *****

 581          KK    C13A
 582          KM   COMBINE FLOWS FROM S12 AND S13A
 583          KM   CONCENTRATION OF FLOWS AT RECKER ROAD AND UNIVERSITY DRIVE.
 584          HC       2    2.27
              *
              * DDM   ***** Preserved *****

 585          KK  UNIVBA
 586          KM   ROUTE FLOWS THROUGH THE UNIVERSITY DRAIN BASIN AT 62ND ST. AND UNIVERSITY DR.
              * KO     3
 587          DT   BASIN   31.28
 588          DI       0    1000   10000
 589          DQ       0    1000   10000
              *
              * KK RD13A
              * KM ROUTE THE UNIVERSITY BASIN OUTFLOW TO RECKER ROAD VIA THE UNIVERSITY DRAIN
              * RD  1500    .006    .013            CIRC      1.5
              *
              * DDM   ***** Updated *****
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HEC-1 INPUT

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

 590          KK     13b
 591          KM   BASIN 13b
 592          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 593          KM    L=      1.1  Lca=       .7   S=   40.9  Kn= .051  LAG=  32.9
 594          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 595          BA     .23
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596          LG      .23      .25     4.45      .46    31.00
597          UI      23.      50.     103.     133.     167.     232.     282.     210.     168.     131.
598          UI      97.      52.      39.      26.      19.       7.       7.       7.       7.       0.
599          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
600          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             *
             * DDM   ***** Preserved *****

601          KK    D13B
602          KM   DIVERTED FLOWS INTO THE UNIVERSITY DRAIN - CAPACITY OF PIPE = 119 CFS
603          DT   D13BS
604          DI       0     119     200    1000   10000
605          DQ       0       0      81     881    9881
             *
             * DDM   ***** Preserved *****

606          KK    C13B
607          KM   COMBINE FLOWS FROM SUBBASINS 6, 13B, FLOWS IN THE UNIVERSITY DRAIN
608          HC       3    2.15
             *
             * DDM   ***** Preserved *****

609          KK  RD13BW
610          KM    ROUTE FLOWS IN UNIVERSITY DRAIN FROM RECKER ROAD TO HIGLEY ROAD
611          KM    SLOPE ADJUSTED FROM .006 TO .002 TO SIMULATE A VELOCITY OF 3 FT/SEC
612          RD    5280   .0020    .013            CIRC     4.8
             *
             * DDM   ***** Preserved *****

613          KK    GD6W
614          KM   RETRIEVE DIVERTED FLOWS FROM RECKER ROAD AND BROWN ROAD
615          DR     D6W
             *
             * DDM   ***** Preserved *****

616          KK  R6WT14
617          KM   ROUTE HYDROGRAPH D6A TO C14 AT HIGLEY ROAD AND UNIVERSITY DRIVE
618          KM   VIA RURAL ROADS
619          KM   SLOPE ADJUSTED FROM .006 TO .110 TO SIMULATE A VELOCITY OF 3 FT/SEC
620          RS       8    FLOW      -1
621          RC    0.03   0.015    0.03    7480   0.110
622          RX       0    1005    1009    1009    1041    1041    1044    2049
623          RY       1      .5      .5       0       0      .5      .5       1
             * DDM   ***** Updated *****
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                                          HEC-1 INPUT

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


624          KK      14
625          KM   BASIN 14
626          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
627          KM    L=      1.4  Lca=       .7   S=   46.4  Kn= .054  LAG=  37.2
628          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
629          BA    1.00
630          LG     .23      .25     4.60      .42    29.00
631          UI     90.     150.     357.     471.     570.     706.    1007.    1056.     809.     666.
632          UI    532.     424.     279.     158.     144.      90.      67.      28.      28.      28.
633          UI     28.      28.       0.       0.       0.       0.       0.       0.       0.       0.
634          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
             *
             *
             * DDM   ***** Preserved *****

635          KK     D14
636          KM    DIVERT FLOWS INTO THE UNIVERSITY DRAIN
637          DT    D14S
638          DI       0     358    1000   10000
639          DQ       0       0     642    9642
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                    *
                    * DDM   ***** Preserved *****

640                 KK     C14
641                 KM   COMBINE FLOWS FROM DIVERTED 6 (FROM RECKER ROAD AND BROWN ROAD), SUBBASIN 14,
642                 KM    AND UNIVERSITY DRAIN AT HIGLEY ROAD AND UNIVERSITY DRIVE
643                 HC       3    2.16
                    *
                    * DDM   ***** Preserved *****

644                 KK   RD14W
645                 KM   ROUTE FLOWS THROUGH THE UNIVERSITY DRAIN
646                 KM   THE CLOSEST TIME STEP - WAS A DIFFERENCE OF .25 HOUR RESULTING IN A
647                 KM   VELOCITY OF 1.9 FT/SEC RATHER THAN 3 FT/SEC.
648                 RD    1685   .0035    .013            CIRC       7
                    * DDM   ***** Updated *****

649                 KK      16
650                 KM   BASIN 16
651                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
652                 KM    L=        .5  Lca=        .2   S=   38.0  Kn= .045  LAG=  13.5
653                 KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
654                 BA     .09
655                 LG     .22      .25    4.65     .40   39.00
656                 UI     41.     146.    191.    109.     70.     45.     27.     18.     11.      6.
657                 UI      4.       4.      0.      0.      0.      0.      0.      0.      0.      0.
658                 UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

659                 KK     D16
660                 KM   RETAIN THE 100-YR 2-HR RUNOFF VOLUME. 25% OF MAX IS USED BECAUSE 75% HAS BEEN
661                 KM   PREVIOUSLY DEVELOPED
662                 DT   RET16       2
663                 DI       0   10000
664                 DQ       0   10000
                    * DDM   ***** Preserved *****

665                 KK     C16
666                 KM   COMBINE FLOWS FROM S16 AND C14, BEFORE ENTERING INTO THE EMF
667                 KO                                      21
668                 HC       2     .64
                    * ZW A=UNIVERSITY DRIVE  B=EMF  C=FLOW  E=5MIN  F=100YR
                    *
                    * DDM   ***** Preserved *****

669                 KK  EMFUNV
670                 KM   COMBINE FLOWS FROM C16I AND C15, IN THE EMF AT UNIVERSITY DRIVE
671                 HC       2
                    *
                    * DDM   ***** Preserved *****

672                 KK   16T21
673                 KM   ROUTE FLOWS FROM S16 (AT UNIVERSITY DRIVE) TO C21 (AT APACHE TRAIL)
674                 KM   VIA EMF
675                 KM   SLOPE ADJUSTED FROM .00004 TO .0010 TO SIMULATE A VELOCITY OF 5 FT/SEC
                    * KO     3
676                 RS       2    FLOW      -1
677                 RC   0.030   0.030   0.030    3400  0.0010
678                 RX       0      10      20      50     160     180     190     200
679                 RY      12      12      12       0       0      25      25      25
                    *
                    * DDM   ***** Preserved *****

680                 KK  GD13AS
681                 KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN BASIN AT 62ND ST
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682          DR   D13AS
             *
             * DDM   ***** Preserved *****

683          KK  13AT21
684          KM   ROUTE FLOWS FROM C13 TO S21 TO
685          KM   VIA RURAL ROADS
686          KM   SLOPE ADJUSTED FROM .006 TO .020 TO SIMULATE A VELOCITY OF 3 FT/SEC
687          RS       8    FLOW      -1
688          RC   0.030    .015   0.030    7240   0.020
689          RX       0    1009    1021    1021    1089    1089    1105    2144
690          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

691          KK  GD13BS
692          KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN AT RECKER ROAD
693          DR   D13BS
             *
             * DDM   ***** Preserved *****

694          KK  13BT21
695          KM   ROUTE FLOWS FROM C13B TO S21
696          KM   VIA RURAL ROADS
697          KM   SLOPE ADJUSTED FROM .006 TO .001 TO SIMULATE A VELOCITY OF 3 FT/SEC
698          RS       7    FLOW      -1
699          RC   0.030    .015   0.030    6240   0.010
700          RX       0    1009    1021    1021    1089    1089    1105    2144
701          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Preserved *****

702          KK   GD14S
703          KM   RETRIEVE OVERFLOWS FROM THE UNIVERSITY DRAIN AT HIGLEY ROAD.
704          DR    D14S
             *
             * DDM   ***** Preserved *****

705          KK   14T21
706          KM   ROUTE FLOWS FROM C14 (HIGLEY & UNIVERSITY) TO S21 (APACHE & EMF)
707          KM   VIA RURAL ROADS
708          RS       2    FLOW      -1
709          RC   0.030    .015   0.030    2000  0.0061
710          RX       0    1009    1021    1021    1089    1089    1105    2144
711          RY     1.5     0.5     0.5       0       0     0.5     0.5     1.5
             *
             * DDM   ***** Updated *****

712          KK      21
713          KM   BASIN 21
714          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
715          KM    L=      1.7  Lca=       .8   S=   38.0  Kn= .056  LAG=  44.6
716          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
717          BA     .53
718          LG     .22     .25    4.50     .46   31.00
719          UI     40.     40.    134.    182.    220.    256.    307.    408.    503.    410.
720          UI    341.    289.    241.    198.    152.     92.     69.     63.     40.     38.
721          UI     12.     12.     12.     12.     12.     12.      0.      0.      0.      0.
722          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

723          KK     C21
724          KM   COMBINE FLOWS FROM S21 AND C13A AT APACHE TRAIL AND EMF, 13B, 14S,
725          KM    BEFORE ENTERING INTO THE EMF.
726          KO                                      21
```

```
727          HC        4     6.23
             * ZW A=APACHE TRAIL  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM    ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 20

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

728          KK  EMFAPC
729          KM   COMBINE FLOWS FROM C21I AND C16 AT APACHE TRAIL WITHIN THE EMF
730          HC        2
             *
             * DDM    ***** Preserved *****

731          KK   21T28
732          KM   ROUTE FLOWS FROM C21 (AT APACHE TRAIL) TO S28 (AT BROADWAY)
733          KM   VIA EMF
734          KM   SLOPE ADJUSTED FROM .0013 TO .0010 TO SIMULATE A VELOCITY OF 5 FT/SEC
             * KO      3
735          RS        2    FLOW      -1
736          RC    0.030   0.030   0.030    3300   0.001
737          RX        0     110     120     150     240     270     280     290
738          RY       12      11      10       0       0      10      11      12
             *
             * DDM    ***** Updated *****

739          KK       19
740          KM   BASIN 19
741          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
742          KM    L=      1.4  Lca=       .6   S=   46.4  Kn= .038  LAG=  24.7
743          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
744          BA     .76
745          LG     .19     .25    4.00     .61   57.00
746          UI    103.    354.    568.    771.   1209.    979.    716.    510.    266.    167.
747          UI    103.     35.     32.     32.      0.      0.      0.      0.      0.      0.
748          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM    ***** Preserved *****

749          KK     D19
750          KM    RETAIN THE 100-HR 2-HR RUNOFF VOLUME. 55% OF MAXIMUM IS USED BECAUSE 55%
751          KM    OF THE BASIN CAN BE DEVELOPED IN THE FUTURE AND WILL HAVE RETENTION
752          DT   RET19      39
753          DI        0   10000
754          DQ        0   10000
             *
             * DDM    ***** Preserved *****

755          KK   GD11S
756          KM   RETRIEVE DIVERTED HYDROGRAPH D11S
757          DR    D11S
             *
             * DDM    ***** Preserved *****

758          KK    RD11
759          KM   ROUTE FLOWS TO S19 (AT POWER ROAD AND APACHE TRAIL)
760          KM   VIA WASH
761          KM   SLOPE ADJUSTED FROM .007 TO .07 TO SIMULATE A VELOCITY OF 2 FT/SEC
762          RS        9    STOR      -1
763          RC    0.030   0.030   0.030    5500   0.070
764          RX        0     500    1000    1250    1500    1750    1750    1750
765          RY      1.5       1     0.5    0.25    0.25     0.5     1.5       5
             *
             * DDM    ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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766          KK   GD12S
767          KM   RETRIEVE DIVERTED HYDROGRAPH D12S
768          DR    D12S
             *
             * DDM   ***** Preserved *****

769          KK    RD12
770          KM   ROUTE FLOWS TO S19 (AT POWER ROAD AND APACHE TRAIL)
771          KM   VIA POWER ROAD
772          KM   SLOPE ADJUSTED FROM .0085 TO .0167 TO SIMULATE A VELOCITY OF 3 FT/SEC
773          RS       3    FLOW      -1
774          RC    0.03   0.015    0.03    2640  0.0167
775          RX       0    1005    1012    1012    1080    1080    1087    2096
776          RY       1      .5      .5       0       0      .5      .5       1
             *
             * DDM   ***** Preserved *****

777          KK     C19
778          KM   COMBINE FLOWS FROM S19, D11 AND D12  (AT POWER ROAD AND APACHE TRAIL)
779          HC       3    1.93
             *
             * DDM   ***** Preserved *****

780          KK   19T27
781          KM   ROUTE FLOWS FROM S19 (AT POWER ROAD AND APACHE TRAIL) TO S27 (AT POWER ROAD
782          KM   AND BROADWAY ROAD)  VIA POWER ROAD
783          KM   SLOPE ADJUSTED FROM .0057 TO .010 TO SIMULATE A VELOCITY OF 3 FT/SEC
784          RS       3    FLOW      -1
785          RC    0.03   0.015    0.03    2600  0.0100
786          RX       0    1005    1012    1012    1106    1106    1113    2122
787          RY       1     0.5     0.5       0       0     0.5     0.5       1
             * DDM   ***** Updated *****

788          KK      27
789          KM   BASIN 27
790          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
791          KM    L=       .6  Lca=       .3   S=   45.0  Kn= .040  LAG=  14.6
792          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
793          BA     .24
794          LG     .15     .25    4.15     .62   54.00
795          UI    101.    311.    575.    467.    259.     94.     38.     17.      0.      0.
796          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

797          KK     D27
798          KM    RETAIN THE 100-YR 2-HR RUNOFF VOLUME. 10% OF MAXIMUM IS USED: 10% OF BASIN
799          KM    CAN BE DEVELOPED IN FUTURE
800          DT   RET27       2
801          DI       0   10000
802          DQ       0   10000
             *
             * DDM   ***** Preserved *****
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                                                HEC-1 INPUT

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

803          KK     C27
804          KM   COMBINE FLOWS FROM S27(AT POWER RD AND BROADWAY RD) AND C19 (FROM POWER ROAD
805          KM     AND APACHE TRAIL)
806          HC       2
             *
             * DDM   ***** Preserved *****

807          KK   27T28
808          KM   ROUTE FLOWS FROM C27 (AT POWER ROAD AND BROADWAY) TO S28 (BROADWAY ROAD AND
809          KM    HIGLEY ROAD (EMF))
810          KM   VIA CONCRETE LINED CHANNEL
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811          KM   SLOPE ADJUSTED FROM .002 TO .00045 TO SIMULATE A VELOCITY OF 5 FT/SEC
812          RS       6    FLOW      -1
813          RC   0.035   0.015   0.035    8640  .00065
814          RX       0     312     326     331     351     356     370     482
815          RY       8       6       5       0       0       5       6       8
             * DDM   ***** Updated *****

816          KK      20
817          KM   BASIN 20
818          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
819          KM    L=      2.4  Lca=      1.2   S=   37.8  Kn= .043  LAG=  46.7
820          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
821          BA     .58
822          LG     .22     .25    4.15     .56   41.00
823          UI     42.     42.    128.    183.    222.    257.    305.    375.    515.    476.
824          UI    385.    331.    277.    234.    195.    139.     84.     71.     62.     42.
825          UI     38.     13.     13.     13.     13.     13.     13.      0.      0.      0.
826          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

827          KK     D20
828          KM    RETAIN 100-YR 2-HR RUNOFF VOLUME. 2% OF MAX USED: 2% OF BASIN AVAILABLE
829          KM    FOR FUTURE DEVELOPMENT
830          DT   RET20       1
831          DI       0   10000
832          DQ       0   10000
             *
             * DDM   ***** Preserved *****

833          KK   20T28
834          KM   ROUTE FLOWS FROM S20 (JUST EAST OF THE EMF) TO S28 (BROADWAY RD AND EMF)
835          KM   VIA RURAL STREET
836          KM   SLOPE ADJUSTED FROM .006 TO .009 TO SIMULATE A VELOCITY OF 3 FT/SEC
837          RS       3    FLOW      -1
838          RC    0.03   0.015    0.03    2400   0.009
839          RX       0    1005    1009    1009    1041    1041    1044    2049
840          RY       1      .5      .5       0       0      .5      .5       0
             *
             * DDM   ***** Updated *****
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                                        HEC-1 INPUT

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


841          KK      28
842          KM   BASIN 28
843          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
844          KM    L=      2.0  Lca=       .8   S=   39.5  Kn= .041  LAG=  35.1
845          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
846          BA     .90
847          LG     .20     .25    4.45     .48   52.00
848          UI     87.    163.    362.    471.    579.    746.   1068.    885.    705.    562.
849          UI    445.    314.    171.    143.     91.     68.     27.     27.     27.     27.
850          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
851          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

852          KK     D28
853          KM    RETAIN 100-YR 2-HR RUNOFF VOLUME. 50% OF MAX USED AS RETENTION
854          DT   RET28      42
855          DI       0   10000
856          DQ       0   10000
             * DDM   ***** Preserved *****

857          KK     C28
858          KM   COMBINE FLOWS FROM S28, S20, AND C27 (AT BROADWAY RD BEFORE ENTERING INTO THE
859          KM    EMF.
860          KO                                    21
```

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861          HC       3
             * ZW A=BROADWAY ROAD  B=EMF  C=FLOW  E=5MIN  F=100YR
             *
             * DDM   ***** Preserved *****

862          KK  EMFBRD
863          KM   COMBINE FLOWS FROM C28I AND C21 WITHIN THE EMF AT BROADWAY ROAD.
864          HC       2   15.44
             *
             * DDM   ***** Preserved *****

865          KK   28T35
866          KM   ROUTE FLOWS FROM C28 (BROADWAY ROAD) TO S35 (SOUTHERN AVE.)
867          KM   VIA EMF
868          KM   SLOPE ADJUSTED FROM .0009 TO .00050 TO SIMULATE A VELOCITY OF 5 FT/SEC
             * KO     3
869          RS       4    FLOW      -1
870          RC   0.040   0.030   0.040    5900 0.00050
871          RX       0     115     130     145     220     250     280     395
872          RY      14      12      11       0       0      10      11      14
             * DDM   ***** Updated *****

873          KK      26
874          KM   BASIN 26
875          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
876          KM    L=        .8  Lca=        .3   S=   43.8  Kn= .048  LAG=  19.6
877          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
878          BA     .25
879          LG     .23     .25    4.25     .52   34.00
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                                          HEC-1 INPUT

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

880          UI     53.    189.    287.    478.    387.    258.    144.     68.     36.     13.
881          UI     13.      0.      0.      0.      0.      0.      0.      0.      0.      0.
882          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

883          KK   26T34
884          KM   ROUTE FLOWS FROM S26 (AT 72ND ST AND BROADWAY) TO S34 (AT POWER RD AND
885          KM    SOUTHERN AVE.)  VIA ROADS
886          KM   SLOPE ADJUSTED FROM .006 TO .020 TO SIMULATE A VELOCITY OF 3 FT/SEC
887          RS       7    FLOW      -1
888          RC   0.030   0.015   0.030    6600    0.02
889          RX       0    1005    1009    1009    1041    1041    1044    2049
890          RY       1      .5      .5       0       0      .5      .5       1
             * DDM   ***** Updated *****

891          KK      34
892          KM   BASIN 34
893          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
894          KM    L=       1.7  Lca=      1.0   S=   32.2  Kn= .066  LAG=  61.2
895          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
896          BA     .90
897          LG     .20     .25    4.65     .42   26.00
898          UI     50.     50.     71.    173.    214.    253.    283.    316.    364.    414.
899          UI    535.    638.    560.    474.    419.    375.    323.    286.    248.    211.
900          UI    156.    102.     87.     82.     68.     50.     50.     28.     15.     15.
901          UI     15.     15.     15.     15.     15.     15.      0.      0.      0.      0.
902          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             * DDM   ***** Preserved *****

903          KK     D34
904          KM   RETAIN 100 YEAR 2 HOUR. BASIN IS COMPRISED OF THE ARIZONA GOLF RESORT AND THE
905          KM   GOLDEN HILLS DEVELOPMENT BOTH OF WHICH HAVE RETENTION. 100% OF MAXIMUM IS USD
906          DT   RET34      70
907          DI       0   10000
908          DQ       0   10000
             *
```

```
                    * DDM   ***** Preserved *****

909                 KK     C34
910                 KM   COMBINE FLOWS FROM S26 (72N ST AND BROADWAY) AND S34 (POWER RD & SOUTHERN AVE
911                 HC       2
                    *
                    * DDM   ***** Preserved *****

912                 KK   34T35
913                 KM   ROUTE FLOWS FROM C34 (POWER RD & SOUTHERN) TO S35 (EMF AND SOUTHERN AVE)
914                 KM   VIA SOUTHERN ROAD
915                 KM   SLOPE ADJUSTED FROM .0027 TO .010 TO SIMULATE A VELOCITY OF 3 FT/SEC
916                 RS       7    FLOW      -1
917                 RC    0.03   0.015    0.03    6500   0.005
918                 RX       0    1005    1012    1012    1106    1106    1113    2122
919                 RY       1     0.5     0.5       0       0     0.5     0.5       1
                    * DDM   ***** Updated *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


920                 KK      35
921                 KM   BASIN 35
922                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
923                 KM    L=      2.2  Lca=      1.1   S=   29.7  Kn= .082  LAG=  87.8
924                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
925                 BA    1.46
926                 LG     .21     .25    4.50     .46   23.00
927                 UI     56.     56.     56.     56.    179.    207.    244.    271.    302.    322.
928                 UI    348.    380.    421.    456.    536.    638.    741.    669.    585.    526.
929                 UI    482.    448.    412.    369.    340.    309.    280.    260.    216.    165.
930                 UI    129.     99.     97.     92.     92.     64.     56.     56.     56.     27.
931                 UI     17.     17.     17.     17.     17.     17.     17.     17.     17.     17.
932                 UI     17.     17.      0.      0.      0.      0.      0.      0.      0.      0.
933                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

934                 KK     D35
935                 KM   RETAIN THE 100 YEAR 2 HOUR VOLUME. ALL RECENT DEVELOPMENT WHICH HAS RETENTION
936                 KM   ENFORCED. WHAT IS NOT DEVELOPED NOW WILL HAVE RETENTION IN THE FUTURE
937                 DT   RET35     106
938                 DI       0   10000
939                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

940                 KK     C35
941                 KM   COMBINE FLOWS FROM S35 AND C34 AT SOUTHERN AVE AND THE EMF (BEFORE ENTERING)
942                 KO                                      21
943                 HC       2
                    * ZW A=SOUTHERN AVENUE  B=EMF  C=FLOW  E=5MIN   F=100YR
                    *
                    * DDM   ***** Preserved *****

944                 KK  EMFSTH
945                 KM   COMBINE FLOWS FROM C35I AND C28 (FROM BROADWAY RD) WITHIN THE EMF AT
946                 KM    SOUTHERN AVE.
947                 HC       2
                    *
                    * DDM   ***** Preserved *****

948                 KK   35T41
949                 KM   ROUTE FLOWS FROM C35 (SOUTHERN) TO S41 (SUPERSTITIONS FREEWAY)
950                 KM   VIA EMF
951                 KM   SLOPE ADJUSTED FROM .0009 TO .0005 TO SIMULATE A VELOCITY OF 5 FT/SEC
                    * KO      3
952                 RS       2    FLOW      -1
953                 RC   0.040   0.030   0.040    3000  0.0005
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954          RX       0     115     130     145     220     250     280     395
955          RY      14      12      11       0       0      10      11      14
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


956          KK     18b
957          KM   BASIN 18b
958          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
959          KM    L=        .9  Lca=        .4   S=   55.6  Kn= .045  LAG=  20.5
960          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
961          BA     .38
962          LG     .23     .25    4.00     .58   40.00
963          UI     70.    264.    397.    653.    608.    413.    260.    115.     71.     26.
964          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
965          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

966          KK       D18B
967          KM    RETAIN THE 100-YR, 2-HR RUNOFF VOLUME. FROM OBSERVATION OF AERIAL PHOTOS
968          KM    IT APPEARS THAT 1/4 OF BASIN WILL HAVE RETENTION IN THE FUTURE
969          DT  RET18B       8
970          DI       0   10000
971          DQ       0   10000
             *
             * DDM   ***** Preserved *****

972          KK  18BT25
973          KM   ROUTE 18B (AT 80TH ST AND APACHE TRAIL) TO C25 (SOSSAMAN ROAD AND BROADWAY)
974          KM     VIA A CONCRETE CHANNEL
975          KM   SLOPE ADJUSTED FROM .0114 TO .04 TO SIMULATE A VELOCITY OF 5 FT/SEC
976          RS       3    FLOW      -1
977          RC   0.030   0.015   0.030    5200    0.02
978          RX       0    1005    1010    1011    1013    1014    1019    2024
979          RY       6       5       5       0       0       5       5       6
             * DDM   ***** Updated *****

980          KK      25
981          KM   BASIN 25
982          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
983          KM    L=       1.3  Lca=        .6   S=   42.3  Kn= .049  LAG=  31.5
984          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
985          BA     .50
986          LG     .24     .25    4.15     .54   38.00
987          UI     54.    124.    245.    316.    403.    597.    596.    450.    351.    271.
988          UI    175.     93.     76.     54.     20.     16.     16.     16.      0.      0.
989          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

990          KK     D25
991          KM    RETAIN 100-YR 2-YR RUNOFF VOLUME. 50% OF THIS BASIN IS A MODERN TRAILER
992          KM    COURT WITH RETENTION. 50% OF THE MAXIMUM VOLUME FROM THE 100-YR 2-HR MODEL
993          KM    WILL BE USED
994          DT   RET25      20
995          DI       0   10000
996          DQ       0   10000
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 27

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


997          KK   DWC24
998          KM   BRING THE SPLIT FLOW FROM THE FUTURE CONDITIONS MODEL FUTNORTH.DAT USING THE
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 999          KM   .DSS FILE FROM THE RUN. THE DIVERT WAS CALLED DWC24
1000          BA     .01
1001          ZR  =QI   A=BROADWAY  B=AT HAWES   C=FLOW   F=DIVERTED FLOW
              *
              * DDM   ***** Preserved *****

1002          KK  RDWC24
1003          KM   ROUTE THE DIVERTED FLOW DOWN BROADWAY IN A PROPOSED CHANNEL.  THE CHANNEL
1004          KM   HAS NOT YET BEEN GIVEN A NAME BY DIBBLE BUT IT WILL POSSIBLY BE AN EXTENSION
1005          KM   OF CHANNEL BY1, WHICH IS JUST EAST OF THE BROADWAY AND HAWES INTERSECTION
1006          RS       4    FLOW      -1
1007          RC    .013    .013    .013    5280    .008
1008          RX       0      20      25      31      46      52      57      77
1009          RY       4       4       4       0       0       4       4       4
              *
              * DDM   ***** Preserved *****

1010          KK     C25
1011          KM   COMBINE FLOWS FROM SUBBASIN 18B (FROM 80TH ST AND APACHE TRAIL) AND 25 (AT
1012          KM    SOSSAMAN ROAD AND BROADWAY ROAD) AND THOSE FROM SUBBASIN 24 WHICH WAS
1013          KM    DIVERTED AT THE INTERSECTION OF BROADWAY AND HAWES
1014          HC       3
              *
              * DDM   ***** Preserved *****

1015          KK   25T33
1016          KM   ROUTE FLOWS FROM C25 (SOSSAMAN RD AND BROADWAY) TO C33 ( 72ND ST AND
1017          KM     SOUTHERN AVE.) VIA A CONCRETE CHANNEL.
1018          KM   SLOPE ADJUSTED FROM .006 TO .040 TO SIMULATE A VELOCITY OF 5 FT/SEC
1019          RS       5    FLOW      -1
1020          RC   0.030   0.015   0.030    7000   0.040
1021          RX       0    1005    1010    1011    1013    1014    1019    2024
1022          RY       6       5       5       0       0       5       5       6
              *
              * DDM   ***** Updated *****

1023          KK      33
1024          KM   BASIN 33
1025          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1026          KM    L=      2.0  Lca=      1.2   S=   32.5  Kn= .062  LAG=  64.3
1027          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1028          BA     .73
1029          LG     .22     .25    4.55     .44   27.00
1030          UI     38.     38.     42.    128.    157.    186.    210.    232.    263.    295.
1031          UI    355.    451.    485.    402.    348.    312.    278.    243.    216.    189.
1032          UI    161.    120.     81.     67.     63.     58.     38.     38.     32.     12.
1033          UI     12.     12.     12.     12.     12.     12.     12.     12.      0.      0.
1034          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
```



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                                   HEC-1 INPUT

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


1035          KK     D33
1036          KM   RETAIN THE 100 YEAR 2 HOUR VOLUME. DEVELOPMENT HAS RETENTION IN PLACE FOR THE
1037          KM    100-YR 2-YR EVENT
1038          DT   RET33      55
1039          DI       0   10000
1040          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1041          KK     C33
1042          KM   COMBINE FLOWS FROM SUBBASIN 33 AND 25 (AT POWER ROAD AND SOUTHERN AVE.)
1043          HC       2
              *
              * DDM   ***** Preserved *****
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1044          KK   33T40
1045          KM   ROUTE FLOWS FROM C33 TO C40 (POWER ROAD AND SUPERSITION FREEWAY)
1046          KM    VIA A CONCRETE CHANNEL
1047          KM   SLOPE ADJUSTED FROM .006 TO .018 TO SIMULATE A VELOCITY OF 5FT/SEC
1048          RS       2    FLOW      -1
1049          RC   0.030   0.015   0.030    2500   0.018
1050          RX       0    1005    1010    1011    1013    1014    1019    2024
1051          RY       6       5       5       0       0       5       5       6
              * DDM   ***** Updated *****

1052          KK      40
1053          KM   BASIN 40
1054          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1055          KM    L=       .8  Lca=       .4   S=   69.7  Kn= .030  LAG=  12.0
1056          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1057          BA     .58
1058          LG     .12     .25    4.60     .47   71.00
1059          UI    375.   1097.   1709.    901.    290.     92.     50.      0.      0.      0.
1060          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1061          KK     D40
1062          KM   RETAIN 100-YR 2-YR RUNOFF VOLUME. ALL NEW DEVELOPMENT, RETENTION IN PLACE OR
1063          KM   WILL BE
1064          DT   RET40      60
1065          DI       0   10000
1066          DQ       0   10000
              * DDM   ***** Preserved *****

1067          KK     C40
1068          KM    COMBINE FLOWS FROM S33 AND S40 AT POWER ROAD AND SUPERSTITION FREEWAY
1069          HC       2
              *
              * DDM   ***** Preserved *****
```



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                                        HEC-1 INPUT

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

1070          KK    ADD4
1071          KM    BASIN #4 OFF-LINE DETENTION POND
1072          DT     DB4
1073          DI       0     877     905     980    1066    1161    1266    1375
1074          DQ       0       0       5      30      66     111     166     225
              *
              * DDM   ***** Preserved *****

1075          KK    ADD3
1076          KM    BASIN #3 OFF-LINE DETENTION POND
1077          DT     DB3
1078          DI       0    1375    1406    1480    1564    1655    1756    1861    1970
1079          DQ       0       0       6      30      64     105     156     211     270
              *
              * DDM   ***** Preserved *****

1080          KK    ADD2
1081          KM    BASIN #2 OFF-LINE DETENTION POND
1082          DT     DB2
1083          DI       0    1171    1208    1285    1375    1473    1580    1693    1815
1084          DQ       0       0       8      35      75     124     180     243     315
              *
              * DDM   ***** Preserved *****

1085          KK    ADD1
1086          KM    BASIN #1 OFF-LINE DETENTION POND
1087          DT     DB1
1088          DI       0    1158    1285    1336    1363    1365    1381    1420
1089          DQ       0       0      30      47      57      58      88      98
              *
```

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                    * DDM   ***** Preserved *****

1090                KK   40T41
1091                KM   ROUTE SUBBASIN 40 TO C41 (POWER ROAD TO EMF) VIA A CONCRETE CHANNEL
1092                KM   SLOPE ADJUSTED FROM .006 TO .050 TO SIMULATE A VELOCITY OF 5 FT/SEC
1093                RS       3    FLOW      -1
1094                RC   0.030   0.015   0.030    5100   0.050
1095                RX       0    1005    1010    1011    1013    1014    1019    2024
1096                RY       6       5       5       0       0       5       5       6
                    * DDM   ***** Updated *****

1097                KK      41
1098                KM   BASIN 41
1099                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1100                KM    L=      1.4  Lca=       .7   S=   28.2  Kn= .037  LAG=  27.6
1101                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1102                BA     .55
1103                LG     .10     .25    4.45     .53   73.00
1104                UI     66.    191.    339.    441.    630.    784.    568.    429.    314.    169.
1105                UI    112.     70.     36.     20.     20.     20.      0.      0.      0.      0.
1106                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 30

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

1107                KK     D41
1108                KM   RETAIN THE 100 YEAR 2 HOUR VOLUME. ALL NEW DEVELOPMENT, HAS OR WILL HAVE
1109                KM   RETENTION IN PLACE
1110                DT   RET41      62
1111                DI       0   10000
1112                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

1113                KK     C41
1114                KM   COMBINE FLOWS FROM S41 AND S40 (AT SUPERSTITION FREEWAY BEFORE ENTERING
1115                KM    THE EMF)
1116                KO                                      21
1117                HC       2
                    * ZW A=SUPERSTITION FREEWAY  B=EMF  C=FLOW  E=5MIN  F=100YR
                    *
                    * DDM   ***** Preserved *****

1118                KK  EMFSPR
1119                KM    COMBINE FLOWS FROM C41 AND C35 (AT SUPERSTITION IN THE EMF)
1120                HC       2
1121                ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    96          9
                .
                .
   108          .------->    RET9
   106         D9
                .
                .
   111          .           4
                .           V
                .           V
   121          .         4T8
                .           .
                .           .
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129          .           .          8
             .           .          .
             .           .          .
142          .           .          .------->   RET8
139          .           .         D8
             .           .          .
             .           .          .
145          .         C8............
             .           .
             .           .
151     EMFHOB............
             V
             V
156      C9T15
             .
             .
163          .           3
             .           .
             .           .
177          .           .------->   RET3
175          .         D3
             .           V
             .           V
180          .        3T7
             .           .
             .           .
188          .           .          7
             .           .          .
             .           .          .
201          .           .          .------->   RET7
198          .           .         D7
             .           .          .
             .           .          .
204          .         C7............
             .           V
             .           V
208          .       7T10
             .           .
             .           .
217          .           .         10
             .           .          .
             .           .          .
231          .           .          .------->   RET10
228          .           .        D10
             .           .          .
             .           .          .
234          .        C10............
             .           V
             .           V
238          .      10T8A
             .           .
             .           .
245          .           .         8a
             .           .          .
             .           .          .
258          .           .          .------->   RET8A
255          .           .        D8A
             .           .          .
             .           .          .
261          .        C8A............
             .           V
             .           V
265          .     8AT15A
             .           .
             .           .
273          .           .        15a
             .           .          .
             .           .          .
287          .           .          .------->  RET15A
284          .           .       D15A
             .           .          .
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290          .          .          .
             .       C15A...........
             .          .
             .          .
295     EMFBRN...........
             V
             V
299     15AT15
             .
             .
311          .        15b
             .          .
             .          .
325          .          .-------> RET15B
322          .       D15B
             .          .
             .          .
328     EMFCLB...........
             V
             V
332      15T16
             .
             .
339          .          1
             .          .
             .          .
353          .          .------->   RET1
350          .         D1
             .          .
             .          .
360          .          .------->    D1W
356          .        D1S
             .          V
             .          V
363          .        1T5
             .          .
             .          .
371          .          .          5
             .          .          .
             .          .          .
385          .          .          .------->   RET5
382          .          .         D5
             .          .          .
             .          .          .
388          .         C5...........
             .          .
             .          .
397          .          .------->    D5S
393          .        DC5
             .          V
             .          V
400          .        5T6
             .          .
             .          .
408          .          .          2
             .          .          .
             .          .          .
423          .          .          .------->   RET2
420          .          .         D2
             .          .          V
             .          .          V
426          .          .        2T6
             .          .          .
             .          .          .
434          .          .          .          6
             .          .          .          .
             .          .          .          .
448          .          .          .          .------->   RET6
445          .          .          .        D6
             .          .          .          .
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453                                                  .<-------     D1W
451                                              GD1
                                                  V
                                                  V
454                                           RGD1A
                                                  V
                                                  V
462                                           RGD1B
                                                  .
                                                  .
469                 C6.................................
                     .
                     .
477                  .------->     D6W
473                DC6
                     V
                     V
480              6T13B
                     .
                     .
488                       11
                           .
                           .
505                        .------->    D11S
500                     D11
                           V
                           V
508                   11T12
                           .
                           .
516                        .          12
                           .           .
                           .           .
531                        .           .------->   RET12
528                        .         D12
                           .           .
                           .           .
536                        .           .           .<-------     D5S
534                        .           .        GD5S
                           .           .           V
                           .           .           V
537                        .           .       RGD5A
                           .           .           .
                           .           .           .
545                     C12.......................
                           .
                           .
553                        .------->    D12S
549                    DC12
                           V
                           V
556                 12T13A
                           .
                           .
564                        .         13a
                           .           .
                           .           .
578                        .           .------->   D13AS
575                        .        D13A
                           .           .
                           .           .
581                    C13A............
                           .
                           .
587                        .------->   BASIN
585                 UNIVBA
                           .
                           .
590                        .         13b
                           .           .
                           .           .
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603          .          .          .          .-------->  D13BS
601          .          .          .       D13B
             .          .          .          .
             .          .          .          .
606          .       C13B.......................
             .          V
             .          V
609          .      RD13BW
             .          .
             .          .
615          .          .          .<-------     D6W
613          .          .       GD6W
             .          .          V
             .          .          V
616          .          .      R6WT14
             .          .          .
             .          .          .
624          .          .          .         14
             .          .          .          .
             .          .          .          .
637          .          .          .          .-------->   D14S
635          .          .          .        D14
             .          .          .          .
             .          .          .          .
640          .         C14.........................
             .          V
             .          V
644          .       RD14W
             .          .
             .          .
649          .          .         16
             .          .          .
             .          .          .
662          .          .          .-------->  RET16
659          .          .        D16
             .          .          .
             .          .          .
665          .         C16............
             .          .
             .          .
669     EMFUNV............
             V
             V
672      16T21
             .
             .
682          .          .<-------  D13AS
680          .      GD13AS
             .          V
             .          V
683          .      13AT21
             .          .
             .          .
693          .          .          .<-------  D13BS
691          .          .      GD13BS
             .          .          V
             .          .          V
694          .          .      13BT21
             .          .          .
             .          .          .
704          .          .          .          .<-------    D14S
702          .          .          .      GD14S
             .          .          .          V
             .          .          .          V
705          .          .          .      14T21
             .          .          .          .
             .          .          .          .
712          .          .          .          .         21
             .          .          .          .          .
             .          .          .          .          .
723          .         C21.................................
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                .           .
                .           .
728       EMFAPC............
              V
              V
731        21T28
                .
                .
739             .        19
                .         .
                .         .
752             .         .-------->   RET19
749             .       D19
                .         .
                .         .
757             .         .          .<-------    D11S
755             .         .      GD11S
                .         .         V
                .         .         V
758             .         .      RD11
                .         .         .
                .         .         .
768             .         .         .           .<-------    D12S
766             .         .         .      GD12S
                .         .         .          V
                .         .         .          V
769             .         .         .       RD12
                .         .         .          .
                .         .         .          .
777             .       C19........................
                .         V
                .         V
780             .     19T27
                .         .
                .         .
788             .         .        27
                .         .         .
                .         .         .
800             .         .         .-------->   RET27
797             .         .       D27
                .         .         .
                .         .         .
803             .       C27............
                .         V
                .         V
807             .     27T28
                .         .
                .         .
816             .         .        20
                .         .         .
                .         .         .
830             .         .         .-------->   RET20
827             .         .       D20
                .         .         V
                .         .         V
833             .         .     20T28
                .         .         .
                .         .         .
841             .         .         .          28
                .         .         .           .
                .         .         .           .
854             .         .         .           .-------->   RET28
852             .         .         .         D28
                .         .         .           .
                .         .         .           .
857             .       C28........................
                .         .
                .         .
862       EMFBRD............
              V
              V
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865      28T35
             .
             .
873          .          26
             .           V
             .           V
883          .       26T34
             .           .
             .           .
891          .           .          34
             .           .           .
             .           .           .
906          .           .           .-------->   RET34
903          .           .        D34
             .           .           .
             .           .           .
909          .         C34............
             .           V
             .           V
912          .       34T35
             .           .
             .           .
920          .           .          35
             .           .           .
             .           .           .
937          .           .           .-------->   RET35
934          .           .        D35
             .           .           .
             .           .           .
940          .         C35............
             .           .
             .           .
944      EMFSTH............
             V
             V
948      35T41
             .
             .
956          .         18b
             .           .
             .           .
969          .           .-------->  RET18B
966          .           D
             .           V
             .           V
972          .      18BT25
             .           .
             .           .
980          .           .          25
             .           .           .
             .           .           .
994          .           .           .-------->   RET25
990          .           .        D25
             .           .           .
             .           .           .
997          .           .           .       DWC24
             .           .           .           V
             .           .           .           V
1002         .           .           .      RDWC24
             .           .           .           .
             .           .           .           .
1010         .         C25........................
             .           V
             .           V
1015         .       25T33
             .           .
             .           .
1023         .           .          33
             .           .           .
             .           .           .
1038         .           .           .-------->   RET33
```

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1035          .          .        D33
              .          .          .
              .          .          .
1041          .       C33............
              .          V
              .          V
1044          .     33T40
              .          .
              .          .
1052          .          .         40
              .          .          .
              .          .          .
1064          .          .          .-------->   RET40
1061          .          .        D40
              .          .          .
              .          .          .
1067          .       C40............
              .          .
              .          .
1072          .          .-------->     DB4
1070          .      ADD4
              .          .
              .          .
1077          .          .-------->     DB3
1075          .      ADD3
              .          .
              .          .
1082          .          .-------->     DB2
1080          .      ADD2
              .          .
              .          .
1087          .          .-------->     DB1
1085          .      ADD1
              .          V
              .          V
1090          .     40T41
              .          .
              .          .
1097          .          .         41
              .          .          .
              .          .          .
1110          .          .          .-------->   RET41
1107          .          .        D41
              .          .          .
              .          .          .
1113          .       C41............
              .          .
              .          .
1118      EMFSPR............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *            SEPTEMBER 1990             *
 *             VERSION 4.0               *
*
 *                                       *
 *  RUN DATE  12/11/1997  TIME  07:54:01 *
 *                                       *
 *****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
 *          609 SECOND STREET
*                                       *
*       DAVIS, CALIFORNIA 95616         *
*            (916) 756-1104             *
*                                       *
*****************************************
```

ALL HYDROGRAPHS ENTERING THE EMF ARE SENT TO TAPE 21

AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROADS TO THE EAST
ALL THE HYDROGRAPHS ENTERING INTO THE EMF ARE SENT TO TAPE 21

ALL STREET ROUTINGS HAVE N VALUES OF .015 FOR ASPHALT AND .03 FOR OVERLAND FLOWS

EAST MARICOPA COUNTY AREA DRAINAGE MASTER STUDY - PHASE 2
THIS AREA IS BOUNDED BY THE EMF TO THE WEST, THE CAP AND VARIOUS ROAD TO THE EAST, MCDOWELL ROAD TO THE NORTH AND THE SUPERSTITION FREEWAY TO THE SOUTH

FILENAME: FUTPHASE.DAT
FILE LOCATION: C:\DAVE\SEMAG97

DDMS FILE FAMILY NAME: FUTPHASE
FILE FAMILY LOCATION: C:\DAVE\SEMAG97

THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 18.60 SQ. MI.
THIS MODEL USES THE REVISED LAND USE AND A Kn VALUE OF 0.09 FOR DESERT LAND USES

THIS MODEL WAS REVISED TO ESTABLISH CONCENTRATION POINTS AND HYDROGRAPHS ENTERING INTO THE EMF.
INITIAL REVISION IN MARCH 1997

100-YEAR 24-HOUR FREQUENCY

METHODOLOGY:
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS DATED 1994
THE NOAA TECHNICAL MEMORANDUM NWS HYDRO-40 DEPTH AREA RATIOS

STUDY INITIALLY PERFORMED BY LISA C. YOUNG
REVISED BY VALERIE A. SWICK
HYDROLOGY BRANCH, ENGINEERING DISTRICT,
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, SPRING 1996

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 5FT/SEC FOR CONCRETE CHANNEL

THIS MODEL DOES NOT REFLECT THE STORM DRAINS IN THE AREA AS THEY HAVE A LOW CAPACITY AND OUTLET AT THE SAME LOCATION AS SURFACE FLOW

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*******************************************************************
* THIS FUTURE CONDITIONS MODEL MUST USE USE THE DSS FILE FROM THE   *
* FUTNORTH MODEL (FUTNORTH.DSS) BECAUSE THERE IS A SPLIT FLOW AT    *
* BROADWAY AND HAWES ROADS.  THIS IS MODELED AS A 50/50 SPLIT, IF   *
* IT WILL ACTUALLY OCCUR IN THE FUTURE IS NOT KNOWN. THIS FLOW IS   *
* BROUGHT INTO THE MODEL AT SUBBASIN 25 WHICH IS WEST OF HAWES ROAD *
*******************************************************************

*******************************************************************
* RETENTION VOLUME WERE OBTAINED BY USE OF THE 100-YR 2-HR MODEL.   *
* BASINS WITH OLDER DEVELOPMENT WILL NOT HAVE 100% OF THIS VOLUME   *
* AS RETENTION, BUT INSTEAD WILL HAVE A PERCENTAGE BASED UPON THE   *
* AMOUNT THAT CAN BE DEVELOPED IN THE FUTURE. THIS WAS BASED UPON   *
* EXAMINATION OF AERIAL PHOTOS AND FIELD OBSERVATION.               *
* 100% OF THE VOLUME FROM THE 100-YR 2-HR MODEL IS TERMED ULTIMATE  *
*******************************************************************
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LAST UPDATED ON 11/19/97

DDM MCUHP2 Phase 2 model, north of Superstition Freeway

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1APR97  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2APR97  ENDING DATE
                     NDTIME        0055  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .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

 79 JD          INDEX STORM NO. 1
                       STRM        3.60  PRECIPITATION DEPTH
                       TRDA         .01  TRANSPOSITION DRAINAGE AREA

 80 PI            PRECIPITATION PATTERN
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 90 JD          INDEX STORM NO. 2
                       STRM        3.58  PRECIPITATION DEPTH
                       TRDA        1.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
.00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
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91 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH

TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.01	.01	.01	.01	.01	.02	.02	.02	.05	.05
.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
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92 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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93 JD INDEX STORM NO. 5

STRM 3.24 PRECIPITATION DEPTH

TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.05	.07	.07	.07	.01	.01	.01	.01	.01	.01
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94 JD INDEX STORM NO. 6

STRM 3.10 PRECIPITATION DEPTH

TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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 95 JD          INDEX STORM NO. 7
                      STRM        3.05  PRECIPITATION DEPTH
                      TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
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*** *** *** *** ***

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            *             *
 151 KK     *    EMFHOB   *
            *             *
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 154 KO          OUTPUT CONTROL VARIABLES
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                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS


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

          **************
          *            *
 290 KK   *      C15A  *
          *            *
          **************

 293 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS


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

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          *            *
 665 KK   *       C16  *
          *            *
          **************

 667 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS


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

          **************
          *            *
 723 KK   *       C21  *
          *            *
          **************

 726 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
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                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                     IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2         300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT        .083  TIME INTERVAL IN HOURS


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


            **************
            *            *
  857 KK    *       C28  *
            *            *
            **************

  860 KO          OUTPUT CONTROL VARIABLES
                    IPRNT           5  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                     IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2         300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT        .083  TIME INTERVAL IN HOURS


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


            **************
            *            *
  940 KK    *       C35  *
            *            *
            **************

  942 KO          OUTPUT CONTROL VARIABLES
                    IPRNT           5  PRINT CONTROL
                    IPLOT           0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE
                    IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                     IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2         300  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT        .083  TIME INTERVAL IN HOURS

   -----DSS---ZOPEN:  Version: 6-EA;  Existing File Opened
                      Unit:  71,  File: FUTPHASE.DSS
 -----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
 Pathname: /BROADWAY/AT HAWES/FLOW/31MAR1997/5MIN/DIVERTED FLOW/
 -----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
 Pathname: /BROADWAY/AT HAWES/FLOW/31MAR1997/5MIN/DIVERTED FLOW/


****** WARNING RDTIMS - MISSING FLOW                IN DSS FILE - READ AND INTERPOLATED VALUES SET TO ZERO
******


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
*** *** *** *** ***
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                **************
                *            *
1113 KK         *       C41  *
                *            *
                **************

1116 KO            OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          0  PLOT CONTROL
                        QSCAL         0.  HYDROGRAPH PLOT SCALE
                        IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                         IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                        ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                        ISAV2        300  LAST ORDINATE PUNCHED OR SAVED
                       TIMINT       .083  TIME INTERVAL IN HOURS

1
                                                  RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                             9        517.   12.33        102.        35.         34.        .44

          DIVERSION TO
+                           RET9       517.   12.33         96.        27.         26.        .44

          HYDROGRAPH AT
+                            D9        64.   13.33         23.         8.          8.        .44

          HYDROGRAPH AT
+                             4      1076.   12.33        193.        63.         61.       1.00

          ROUTED TO
+                            4T8       936.   12.67        193.        63.         61.       1.00

          HYDROGRAPH AT
+                             8       747.   12.08        117.        40.         39.        .50

          DIVERSION TO
+                           RET8       698.   12.00         67.        20.         19.        .50

          HYDROGRAPH AT
+                            D8       707.   12.17         70.        21.         20.        .50

          2 COMBINED AT
+                            C8      1148.   12.17        254.        83.         80.       1.50

          2 COMBINED AT
+                         EMFHOB      1144.   12.17        268.        90.         87.       1.94

          ROUTED TO
+                          C9T15      1119.   12.33        268.        90.         87.       1.94

          HYDROGRAPH AT
+                             3       650.   12.75        153.        46.         45.       1.00

          DIVERSION TO
+                           RET3       650.   12.75        153.        45.         44.       1.00

          HYDROGRAPH AT
+                            D3         9.   21.50          5.         1.          1.       1.00

          ROUTED TO
```

+	3T7	8.	22.92	4.	1.	1.	1.00
+ HYDROGRAPH AT	7	306.	12.25	47.	15.	14.	.28
+ DIVERSION TO	RET7	306.	12.25	47.	14.	13.	.28
+ HYDROGRAPH AT	D7	6.	16.67	4.	1.	1.	.28
+ 2 COMBINED AT	C7	10.	22.92	6.	2.	2.	1.28
+ ROUTED TO	7T10	10.	23.42	6.	2.	2.	1.28
+ HYDROGRAPH AT	10	558.	12.50	100.	30.	29.	.72
+ DIVERSION TO	RET10	558.	12.50	100.	29.	28.	.72
+ HYDROGRAPH AT	D10	7.	19.17	5.	1.	1.	.72
+ 2 COMBINED AT	C10	13.	23.50	8.	2.	2.	2.00
+ ROUTED TO	10T8A	13.	23.83	8.	2.	2.	2.00
+ HYDROGRAPH AT	8a	139.	12.17	18.	5.	5.	.12
+ DIVERSION TO	RET8A	139.	12.17	18.	5.	5.	.12
+ HYDROGRAPH AT	D8A	0.	.08	0.	0.	0.	.12
+ 2 COMBINED AT	C8A	13.	23.83	8.	2.	2.	2.12
+ ROUTED TO	8AT15A	12.	24.33	8.	2.	2.	2.12
+ HYDROGRAPH AT	15a	323.	12.33	52.	16.	15.	.35
+ DIVERSION TO	RET15A	284.	12.17	23.	7.	6.	.35
+ HYDROGRAPH AT	D15A	323.	12.33	34.	9.	9.	.35
+ 2 COMBINED AT	C15A	316.	12.33	33.	11.	10.	2.47
+ 2 COMBINED AT	EMFBRN	1417.	12.33	293.	98.	94.	4.41
+ ROUTED TO	15AT15	1332.	12.58	292.	97.	93.	4.41
+ HYDROGRAPH AT	15b	442.	12.42	76.	23.	22.	.51
+ DIVERSION TO	RET15B	408.	12.25	36.	10.	10.	.51

+	HYDROGRAPH AT	D15B	442.	12.42	48.	13.	13.	.51
+	2 COMBINED AT	EMFCLB	1723.	12.50	336.	109.	105.	4.92
+	ROUTED TO	15T16	1620.	12.67	336.	108.	104.	4.92
+	HYDROGRAPH AT	1	351.	12.33	53.	16.	15.	.39
+	DIVERSION TO	RET1	351.	12.33	53.	16.	15.	.39
+	HYDROGRAPH AT	D1	0.	.08	0.	0.	0.	.39
+	DIVERSION TO	D1W	0.	.08	0.	0.	0.	.39
+	HYDROGRAPH AT	D1S	0.	.08	0.	0.	0.	.39
+	ROUTED TO	1T5	0.	.08	0.	0.	0.	.39
+	HYDROGRAPH AT	5	741.	12.42	128.	40.	38.	.95
+	DIVERSION TO	RET5	603.	12.17	49.	14.	14.	.95
+	HYDROGRAPH AT	D5	741.	12.42	93.	25.	25.	.95
+	2 COMBINED AT	C5	739.	12.42	93.	25.	24.	1.15
+	DIVERSION TO	D5S	350.	12.25	67.	19.	18.	1.15
+	HYDROGRAPH AT	DC5	389.	12.42	25.	6.	6.	1.15
+	ROUTED TO	5T6	250.	12.92	25.	6.	6.	1.15
+	HYDROGRAPH AT	2	645.	12.67	137.	41.	40.	1.00
+	DIVERSION TO	RET2	645.	12.67	137.	38.	37.	1.00
+	HYDROGRAPH AT	D2	15.	16.67	10.	3.	3.	1.00
+	ROUTED TO	2T6	13.	17.67	9.	3.	3.	1.00
+	HYDROGRAPH AT	6	802.	12.42	146.	45.	43.	1.00
+	DIVERSION TO	RET6	629.	12.17	54.	16.	15.	1.00
+	HYDROGRAPH AT	D6	802.	12.42	108.	29.	28.	1.00
+	HYDROGRAPH AT	GD1	0.	.08	0.	0.	0.	.39

	ROUTED TO						
+		RGD1A	0.	.08	0.	0.	0.	.39
	ROUTED TO						
+		RGD1B	0.	.08	0.	0.	0.	.39
	4 COMBINED AT						
+		C6	867.	12.58	128.	36.	35.	2.76
	DIVERSION TO						
+		D6W	400.	12.33	89.	27.	26.	2.76
	HYDROGRAPH AT						
+		DC6	467.	12.58	39.	10.	9.	2.76
	ROUTED TO						
+		6T13B	396.	12.75	39.	10.	9.	2.76
	HYDROGRAPH AT						
+		11	586.	12.83	151.	47.	46.	1.06
	DIVERSION TO						
+		D11S	250.	12.17	108.	37.	35.	1.06
	HYDROGRAPH AT						
+		D11	336.	12.83	43.	11.	10.	1.06
	ROUTED TO						
+		11T12	282.	13.17	43.	11.	10.	1.06
	HYDROGRAPH AT						
+		12	633.	12.75	155.	50.	48.	1.03
	DIVERSION TO						
+		RET12	51.	11.33	24.	8.	8.	1.03
	HYDROGRAPH AT						
+		D12	633.	12.75	151.	42.	40.	1.03
	HYDROGRAPH AT						
+		GD5S	350.	12.25	67.	19.	18.	1.15
	ROUTED TO						
+		RGD5A	364.	12.50	67.	19.	18.	1.15
	3 COMBINED AT						
+		C12	1155.	12.75	254.	70.	68.	2.13
	DIVERSION TO						
+		D12S	300.	12.17	134.	40.	39.	2.13
	HYDROGRAPH AT						
+		DC12	855.	12.75	121.	30.	29.	2.13
	ROUTED TO						
+		12T13A	792.	13.08	121.	30.	29.	2.13
	HYDROGRAPH AT						
+		13a	636.	12.42	116.	37.	35.	.77
	DIVERSION TO						
+		D13AS	629.	12.42	109.	30.	29.	.77
	HYDROGRAPH AT						
+		D13A	7.	1.25	7.	7.	7.	.77
	2 COMBINED AT						
+		C13A	798.	13.08	127.	37.	36.	2.27
	DIVERSION TO						

+	BASIN	723.	12.92	56.	16.	15.	2.27
HYDROGRAPH AT +	UNIVBA	798.	13.08	79.	21.	20.	2.27
HYDROGRAPH AT +	13b	206.	12.33	33.	10.	10.	.23
DIVERSION TO +	D13BS	87.	12.33	6.	1.	1.	.23
HYDROGRAPH AT +	D13B	119.	12.00	27.	9.	8.	.23
3 COMBINED AT +	C13B	952.	13.08	143.	40.	39.	2.15
ROUTED TO +	RD13BW	776.	13.25	141.	40.	38.	2.15
HYDROGRAPH AT +	GD6W	400.	12.33	89.	27.	26.	2.76
ROUTED TO +	R6WT14	402.	12.75	88.	26.	25.	2.76
HYDROGRAPH AT +	14	843.	12.42	144.	44.	43.	1.00
DIVERSION TO +	D14S	485.	12.42	43.	11.	10.	1.00
HYDROGRAPH AT +	D14	358.	12.00	102.	34.	32.	1.00
3 COMBINED AT +	C14	1272.	13.17	325.	99.	96.	2.16
ROUTED TO +	RD14W	1234.	13.17	324.	99.	96.	2.16
HYDROGRAPH AT +	16	112.	12.08	14.	5.	4.	.09
DIVERSION TO +	RET16	19.	11.58	3.	1.	1.	.09
HYDROGRAPH AT +	D16	112.	12.08	13.	4.	3.	.09
2 COMBINED AT +	C16	1307.	13.17	347.	106.	102.	.64
2 COMBINED AT +	EMFUNV	2740.	12.67	652.	205.	198.	5.56
ROUTED TO +	16T21	2629.	12.83	650.	204.	197.	5.56
HYDROGRAPH AT +	GD13AS	629.	12.42	109.	30.	29.	.77
ROUTED TO +	13AT21	570.	12.83	109.	30.	29.	.77
HYDROGRAPH AT +	GD13BS	87.	12.33	6.	1.	1.	.23
ROUTED TO +	13BT21	73.	12.67	6.	1.	1.	.23

+	HYDROGRAPH AT GD14S	485.	12.42	43.	11.	10.	1.00
+	ROUTED TO 14T21	420.	12.58	43.	11.	10.	1.00
+	HYDROGRAPH AT 21	397.	12.50	77.	24.	23.	.53
+	4 COMBINED AT C21	1278.	12.58	220.	62.	60.	6.23
+	2 COMBINED AT EMFAPC	3461.	12.83	806.	248.	239.	11.79
+	ROUTED TO 21T28	3340.	12.92	805.	246.	237.	11.79
+	HYDROGRAPH AT 19	873.	12.17	143.	48.	46.	.76
+	DIVERSION TO RET19	707.	12.00	66.	20.	19.	.76
+	HYDROGRAPH AT D19	873.	12.17	99.	28.	27.	.76
+	HYDROGRAPH AT GD11S	250.	12.17	108.	37.	35.	1.06
+	ROUTED TO RD11	250.	13.00	108.	37.	35.	1.06
+	HYDROGRAPH AT GD12S	300.	12.17	134.	40.	39.	2.13
+	ROUTED TO RD12	300.	12.67	133.	40.	39.	2.13
+	3 COMBINED AT C19	1260.	12.25	334.	104.	100.	1.93
+	ROUTED TO 19T27	1075.	12.58	334.	104.	100.	1.93
+	HYDROGRAPH AT 27	327.	12.08	44.	15.	14.	.24
+	DIVERSION TO RET27	5.	6.17	4.	1.	1.	.24
+	HYDROGRAPH AT D27	327.	12.08	44.	14.	13.	.24
+	2 COMBINED AT C27	1110.	12.58	372.	117.	113.	2.17
+	ROUTED TO 27T28	1040.	12.92	371.	115.	111.	2.17
+	HYDROGRAPH AT 20	432.	12.58	93.	30.	29.	.58
+	DIVERSION TO RET20	7.	2.50	2.	1.	0.	.58
+	HYDROGRAPH AT D20	432.	12.58	93.	29.	28.	.58
+	ROUTED TO 20T28	400.	12.83	93.	29.	28.	.58

+	HYDROGRAPH AT	28	872.	12.33	166.	54.	53.	.90
+	DIVERSION TO	RET28	655.	12.08	71.	21.	20.	.90
+	HYDROGRAPH AT	D28	872.	12.33	118.	33.	32.	.90
+	3 COMBINED AT	C28	1806.	12.58	568.	175.	168.	3.65
+	2 COMBINED AT	EMFBRD	4817.	12.92	1315.	404.	389.	15.44
+	ROUTED TO	28T35	4578.	13.17	1311.	398.	383.	15.44
+	HYDROGRAPH AT	26	287.	12.08	37.	12.	11.	.25
+	ROUTED TO	26T34	208.	12.67	37.	12.	11.	.25
+	HYDROGRAPH AT	34	541.	12.83	126.	38.	37.	.90
+	DIVERSION TO	RET34	541.	12.83	126.	35.	34.	.90
+	HYDROGRAPH AT	D34	13.	16.75	9.	3.	3.	.90
+	2 COMBINED AT	C34	208.	12.67	38.	15.	14.	1.15
+	ROUTED TO	34T35	194.	12.92	37.	14.	13.	1.15
+	HYDROGRAPH AT	35	636.	13.25	190.	57.	55.	1.46
+	DIVERSION TO	RET35	636.	13.25	190.	53.	51.	1.46
+	HYDROGRAPH AT	D35	15.	17.33	11.	3.	3.	1.46
+	2 COMBINED AT	C35	194.	12.92	40.	17.	17.	2.61
+	2 COMBINED AT	EMFSTH	4608.	13.17	1328.	404.	389.	18.05
+	ROUTED TO	35T41	4498.	13.33	1325.	400.	386.	18.05
+	HYDROGRAPH AT	18b	426.	12.08	59.	19.	18.	.38
+	DIVERSION TO	RET18B	57.	11.58	12.	4.	4.	.38
+	HYDROGRAPH AT	D	426.	12.08	55.	15.	14.	.38
+	ROUTED TO	18BT25	323.	12.50	55.	15.	14.	.38
	HYDROGRAPH AT							

+		25	467.	12.33	78.	25.	24.	.50
+	DIVERSION TO	RET25	376.	12.08	35.	10.	10.	.50
+	HYDROGRAPH AT	D25	467.	12.33	53.	15.	14.	.50
+	HYDROGRAPH AT	DWC24	0.	.08	0.	0.	0.	.01
+	ROUTED TO	RDWC24	0.	.08	0.	0.	0.	.01
+	3 COMBINED AT	C25	767.	12.33	107.	30.	29.	.89
+	ROUTED TO	25T33	590.	12.83	106.	30.	29.	.89
+	HYDROGRAPH AT	33	420.	12.83	102.	31.	30.	.73
+	DIVERSION TO	RET33	420.	12.83	102.	28.	27.	.73
+	HYDROGRAPH AT	D33	17.	15.25	10.	3.	3.	.73
+	2 COMBINED AT	C33	590.	12.83	112.	33.	32.	1.62
+	ROUTED TO	33T40	523.	13.08	109.	32.	31.	1.62
+	HYDROGRAPH AT	40	909.	12.00	128.	44.	42.	.58
+	DIVERSION TO	RET40	909.	12.00	108.	30.	29.	.58
+	HYDROGRAPH AT	D40	222.	12.33	41.	13.	13.	.58
+	2 COMBINED AT	C40	584.	13.08	145.	45.	43.	2.20
+	DIVERSION TO	DB4	0.	.08	0.	0.	0.	2.20
+	HYDROGRAPH AT	ADD4	584.	13.08	145.	45.	43.	2.20
+	DIVERSION TO	DB3	0.	.08	0.	0.	0.	2.20
+	HYDROGRAPH AT	ADD3	584.	13.08	145.	45.	43.	2.20
+	DIVERSION TO	DB2	0.	.08	0.	0.	0.	2.20
+	HYDROGRAPH AT	ADD2	584.	13.08	145.	45.	43.	2.20
+	DIVERSION TO	DB1	0.	.08	0.	0.	0.	2.20
+	HYDROGRAPH AT	ADD1	584.	13.08	145.	45.	43.	2.20

```
        ROUTED TO
+                          40T41       534.   13.33        145.        44.        43.       2.20

        HYDROGRAPH AT
+                             41       660.   12.25        121.        41.        40.        .55

        DIVERSION TO
+                          RET41       660.   12.25        111.        31.        30.        .55

        HYDROGRAPH AT
+                            D41        93.   13.08         30.        10.        10.        .55

        2 COMBINED AT
+                            C41       604.   13.25        168.        53.        51.       2.75

        2 COMBINED AT
+                         EMFSPR      4887.   13.33       1434.       438.       422.      20.80
1
                                   SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                       (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                       COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT       PEAK    TIME TO     VOLUME      DT       PEAK    TIME TO     VOLUME
                                                    PEAK                                     PEAK

                              (MIN)     (CFS)     (MIN)      (IN)     (MIN)     (CFS)     (MIN)       (IN)

        FOR STORM = 1  STORM AREA (SQ MI) =        .01
          RD13BW  MANE         5.00    824.48    795.00       .73      5.00    824.48    795.00        .73

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .8512E+02 EXCESS= .0000E+00 OUTFLOW= .8390E+02 BASIN STORAGE= .5595E-01
PERCENT ERROR=   1.4

        FOR STORM = 2  STORM AREA (SQ MI) =       1.00
          RD13BW  MANE         5.00    809.26    795.00       .72      5.00    809.26    795.00        .72

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .8336E+02 EXCESS= .0000E+00 OUTFLOW= .8216E+02 BASIN STORAGE= .5570E-01
PERCENT ERROR=   1.4

        FOR STORM = 3  STORM AREA (SQ MI) =       5.00
          RD13BW  MANE         5.00    738.52    795.00       .65      5.00    738.52    795.00        .65

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7541E+02 EXCESS= .0000E+00 OUTFLOW= .7428E+02 BASIN STORAGE= .5459E-01
PERCENT ERROR=   1.4

        FOR STORM = 4  STORM AREA (SQ MI) =      10.00
          RD13BW  MANE         5.00    638.11    800.00       .57      5.00    638.11    800.00        .57

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .6677E+02 EXCESS= .0000E+00 OUTFLOW= .6542E+02 BASIN STORAGE= .6102E-01
PERCENT ERROR=   1.9

        FOR STORM = 5  STORM AREA (SQ MI) =      30.00
          RD13BW  MANE         5.00    530.79    805.00       .47      5.00    530.79    805.00        .47

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .5558E+02 EXCESS= .0000E+00 OUTFLOW= .5397E+02 BASIN STORAGE= .5903E-01
PERCENT ERROR=   2.8

        FOR STORM = 6  STORM AREA (SQ MI) =      60.00
          RD13BW  MANE         5.00    422.52    805.00       .37      5.00    422.52    805.00        .37
```

```
 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4358E+02 EXCESS= .0000E+00 OUTFLOW= .4214E+02 BASIN STORAGE= .5701E-01
PERCENT ERROR=   3.2

          FOR STORM = 7  STORM AREA (SQ MI) =       90.00
            RD13BW  MANE          5.00    365.82    810.00       .33       5.00    365.82    810.00          .33

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3973E+02 EXCESS= .0000E+00 OUTFLOW= .3841E+02 BASIN STORAGE= .5629E-01
PERCENT ERROR=   3.2

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
             RD14W  MANE          1.67   1333.70    792.35      1.79       5.00   1323.25    790.00         1.79

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2065E+03 EXCESS= .0000E+00 OUTFLOW= .2063E+03 BASIN STORAGE= .7846E-01
PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
             RD14W  MANE          1.67   1310.33    791.85      1.77       5.00   1299.09    790.00         1.77

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2036E+03 EXCESS= .0000E+00 OUTFLOW= .2035E+03 BASIN STORAGE= .7766E-01
PERCENT ERROR=    .0

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
             RD14W  MANE          1.70   1183.83    768.89      1.65       5.00   1179.69    770.00         1.65

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1905E+03 EXCESS= .0000E+00 OUTFLOW= .1903E+03 BASIN STORAGE= .7810E-01
PERCENT ERROR=    .0

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
             RD14W  MANE          1.72   1142.31    766.56      1.52       5.00   1137.61    765.00         1.52

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1748E+03 EXCESS= .0000E+00 OUTFLOW= .1747E+03 BASIN STORAGE= .5610E-01
PERCENT ERROR=    .0

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
             RD14W  MANE          1.73   1101.62    766.48      1.37       5.00   1100.30    765.00         1.38

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1585E+03 EXCESS= .0000E+00 OUTFLOW= .1584E+03 BASIN STORAGE= .5245E-01
PERCENT ERROR=    .0

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
             RD14W  MANE          1.76   1020.66    765.47      1.23       5.00   1017.91    765.00         1.23

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1423E+03 EXCESS= .0000E+00 OUTFLOW= .1422E+03 BASIN STORAGE= .5183E-01
PERCENT ERROR=    .1

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
             RD14W  MANE          1.77   1001.81    764.91      1.18       5.00   1001.61    765.00         1.19

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1366E+03 EXCESS= .0000E+00 OUTFLOW= .1365E+03 BASIN STORAGE= .5048E-01
PERCENT ERROR=    .1
```

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


  -----DSS---ZCLOSE Unit:  71,   File: FUTPHASE.DSS
            Pointer Utilization:    .00
            Number of Records:       0
            File Size:      10.8  Kbytes
            Percent Inactive:    .00
```

APPENDIX E-3

SOUTHERN MESA AREA
100-YEAR, 24-HOUR STORM
FUTURE LAND USE CONDITIONS
HEC-1 MODEL

```
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUL   1997              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   25JUN98  TIME  13:49:19  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
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

1 HEC-1 INPUT

PAGE 1

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

  1           ID   SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
  2           ID   AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
  3           ID   MARCH 1998
  4           ID   SOUTHEAST MESA HIGH RESOLUTION MODEL
  5           ID
  6           ID   FILENAME:  FUTS.DAT
  7           ID
  8           ID   THIS MODEL REPRESENTS THE FUTURE LAND USE CONDITIONS OF THE WATERSHED.
  9           ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 85.5 SQ. MI.
 10           ID   THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
 11           ID   CONDITIONS.
 12           ID
 13           ID   100-YEAR 24-HOUR FREQUENCY
 14           ID
 15           ID   THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
 16           ID   AND EAST OF THE CAP
 17           ID
 18           ID   METHODOLOGY
 19           ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
 20           ID   SCS TYPE II RAINFALL DISTRIBUTION
 21           ID   S-GRAPH HYDROGRAPH
 22           ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 23           ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 24           ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 25           ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
 26           ID   DATED 1994
 27           ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
 28           ID
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29          ID   STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
30          ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
31          ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
32          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
33          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
34          ID
35          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
36          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
37          ID
38          ID   LAND USES ARE UPDATED FROM MAG 97 LAND USES
39          ID
40          ID   RETENTION VOLUMES ARE BASED FROM A 100 YR 2 HR.  VOLUMES WERE ONLY ASSUMED
41          ID   FOR AREAS THAT WILL HAVE FUTURE DEVELOPMENT.  MANY OF THE CURRENT
42          ID   DEVELOPMENTS DO NOT HAVE RETENTION, OR IT IS NOT EFFECTIVE.  IF THERE IS
43          ID   SIGNIFICANT CURRENT RETENTION IT IS ACCOUNTED FOR.  FUTURE VOLUMES ARE
44          ID   ASSUMED TO ONLY BE 80% EFFECTIVE.  THIS TAKES INTO ACCOUNT SMALL AREAS SUCH
45          ID   AS STREETS THAT DO NOT FLOW INTO THE RETENTION BASINS.
46          ID
47          ID   RETENTION IN PINAL COUNTY FOR FUTURE DEVELOPMENT IS NOT CONSIDERED BECAUSE
48          ID   THERE IS NO GUARANTEE OF RETENTION REQUIREMENT ENFORCEMENT.
49          ID
50          ID   NOTE: MUST USE FUTN.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS
51          ID         THE SUPERSTITION.
52          ID
53          ID     LAST UPDATED ON  6/03/98
54          ID
55          ID
1                                          HEC-1 INPUT
PAGE  2

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

56          ID   DDM MCUHP2 SOUTH EAST MESA ADMP - SOUTH OF SUPERSTITION FREEWAY, FUTURE CONDI
            *DIAGRAM
57          IT       5  1APR97    0000    1000
58          IO       5
59          IN      15
60          JD    3.60    0.01
61          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
62          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
63          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
64          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
65          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
66          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
67          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
68          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
69          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
70          PC    .983    .986    .989    .992    .995    .998   1.000
71          JD    3.58    1.00
72          JD    3.49    5.00
73          JD    3.38   10.00
74          JD    3.24   30.00
75          JD    3.10   60.00
76          JD    3.05   90.00
            *
            * DDM   ***** Preserved *****

77          KK    SOSS
78          KM   INFLOW FROM SOSSAMAN BASIN VIA SOSSAMAN CHANNEL
79          KM   QI CARDS ARE BASED ON THE PEAK OF 1800CFS TO SOSSAMAN CHANNEL
80          BA   12.50
81          ZR  =QI A=SOSSAMAN DRAIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
            *
            * DDM   ***** Preserved *****

82          KK   RSOSS
83          KM   ROUTE FLOWS VIA SOSSAMAN CHANNEL TO BASELINE ROAD
84          RS       1    FLOW      -1
85          RC    .030    .025    .030    3500   .0058
86          RX       0       5      10      35      75     110     115     120
87          RY      10      10      10       4       4      10      10      10
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                    * DDM   ***** Updated *****

 88                 KK     59A
 89                 KM   BASIN 59A
 90                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91                 KM    L=        .9  Lca=        .3   S=   34.9  Kn= .070  LAG=  29.7
 92                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 93                 BA     .26
 94                 LG     .23     .25    4.55     .42   33.00
 95                 UI     30.     77.    144.    186.    246.    364.    293.    226.    172.    123.
 96                 UI     64.     48.     30.     15.      9.      9.      9.      0.      0.      0.
 97                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE  3

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


 98                 KK  RET59A
 99                 KM   RETAIN 100YR 2HR VOLUME
100                 DT    D59A       2
101                 DI       0   10000
102                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

103                 KK    C59A
104                 KM    SOSSAMAN DRAIN AT BASELINE ROAD
105                 HC       2
                    * DDM   ***** Preserved *****

106                 KK  59A59B
107                 KM   ROUTE S59A TO 59B VIA SOSSAMAN CHANNEL
108                 KM   BLOCK WALL ON LEFT BANK, SOSSAMAN ROAD ON RIGHT BANK
109                 RS       4    FLOW      -1
110                 RC    .025    .018    .013    6500   .0015
111                 RX       0       3      13      38      78     103     128     203
112                 RY      16      10      10       0       0      10       8      10
                    * DDM   ***** Updated *****

113                 KK     59B
114                 KM   BASIN 59B
115                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
116                 KM    L=       1.2  Lca=        .7   S=   33.9  Kn= .087  LAG=  58.3
117                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
118                 BA     .94
119                 LG     .22     .24    4.65     .41   24.00
120                 UI     54.     54.     93.    193.    244.    284.    318.    361.    415.    501.
121                 UI    653.    666.    546.    473.    422.    364.    319.    273.    233.    172.
122                 UI    110.     94.     89.     68.     54.     54.     19.     17.     17.     17.
123                 UI     17.     17.     17.     17.      0.      0.      0.      0.      0.      0.
124                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

125                 KK  RET59B
126                 KM   RETAIN 100YR 2HR VOLUME
127                 DT    D59B      63
128                 DI       0   10000
129                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

130                 KK    C59B
131                 KM   SOSSAMAN CHANNEL AT GUADALUPE ROAD
132                 HC       2
                    *
                    * DDM   ***** Preserved *****
```

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

 133          KK  59BT60
 134          KM     ROUTE 59B TO 60 GUADALUPE CHANNEL.  Assumed v=5ft/sec for NSTP calculation
 135          KM   THIS IS THE ACTUAL FLOW IN THE GUADALUPE CHANNEL (HAS A DESIGN Q OF 2400 CFS)
 136          RS       4    FLOW      -1
 137          RC     .02    .013     .02    5500    .005
 138          RX       0     518     522     522     560     560     580    2580
 139          RY     8.5     8.5     8.5       0       0       8       7       6
              * DDM   ***** Updated *****

 140          KK      60
 141          KM   BASIN 60
 142          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 143          KM    L=      2.4  Lca=      1.4   S=   31.8  Kn= .087  LAG= 102.0
 144          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 145          BA    2.30
 146          LG     .18     .24    4.65     .43   35.00
 147          UI     76.     76.     76.     76.    130.    250.    286.    330.    364.    395.
 148          UI    422.    452.    484.    522.    571.    607.    689.    820.    915.   1008.
 149          UI    885.    793.    723.    669.    626.    591.    536.    496.    459.    424.
 150          UI    387.    362.    324.    276.    219.    169.    134.    134.    126.    125.
 151          UI    121.     76.     76.     76.     76.     56.     23.     23.     23.     23.
 152          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
 153          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 154          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 155          KK   RET60
 156          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
 157          DT     D60     170
 158          DI       0   10000
 159          DQ       0   10000
              * DDM   ***** Preserved *****

 160          KK  EMFGUA
 161          KM     COMBINE S59 AND S60 AT EMF, GUADALUPE ROAD
 162          HC       2
              *
              * DDM   ***** Preserved *****

 163          KK  GUATEL
 164          KM   ROUTE EMF FLOW FROM GUADALUPE ROAD TO ELLIOT ROAD
 165          RS       3    FLOW      -1
 166          RC     .03    .022     .03    6000   .0003
 167          RX       0     500     520     553     693     726     740     742
 168          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Updated *****
```



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

 169          KK      64
 170          KM   BASIN 64
 171          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 172          KM    L=      1.2  Lca=       .6   S=   25.4  Kn= .051  LAG=  34.4
 173          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 174          BA     .81
 175          LG     .18     .25    4.70     .41   54.00
 176          UI     79.    155.    338.    438.    543.    709.    988.    778.    624.    493.
 177          UI    388.    253.    139.    120.     79.     45.     24.     24.     24.     24.
 178          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 179          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
                 *
                 * DDM   ***** Preserved *****

180              KK   RET64
181              KM   RETAIN 100YR 2HR VOLUME
182              DT     D64      67
183              DI       0   10000
184              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****

185              KK  EMFELL
186              KM     COMBINE CP2 AND S64 AT EMF, ELLIOT ROAD
187              HC       2
                 *
                 * DDM   ***** Preserved *****

188              KK  ELTWAR
189              KM   ROUTE EMF FLOW AT ELLIOT ROAD TO WARNER ROAD VIA THE EMF
190              RS       2    FLOW      -1
191              RC     .03    .022     .03    5500   .0003
192              RX       0     500     520     553     693     726     740     742
193              RY      14      12      11       0       0      11      11      12
                 * DDM   ***** Updated *****

194              KK     61A
195              KM   BASIN 61A
196              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
197              KM    L=        .9  Lca=        .4   S=   36.8  Kn= .037  LAG=  19.1
198              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
199              BA     .52
200              LG     .19     .25    4.20     .56   52.00
201              UI    117.    412.    628.   1037.    786.    517.    261.    132.     62.     28.
202              UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
203              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE  6

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

204              KK  RET61A
205              KM   RETAIN 100YR 2HR VOLUME
206              DT    D61A      42
207              DI       0   10000
208              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****

209              KK   61ATB
210              KM   ROUTING 61A TO 61B VIA ELLSWORTH ROAD
211              RS       6    FLOW      -1
212              RC    .035    .024    .035    5280    .005
213              RX       0     500     750     752     802     852    1102    1602
214              RY       3       2     1.5     1.2     1.2     1.5       2       3
                 * DDM   ***** Updated *****

215              KK     61B
216              KM   BASIN 61B
217              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
218              KM    L=       1.4  Lca=        .7   S=   39.7  Kn= .047  LAG=  33.6
219              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
220              BA    1.09
221              LG     .24     .25    4.80     .37   35.00
222              UI    109.    223.    475.    615.    765.   1049.   1335.   1025.    822.    643.
223              UI    495.    288.    187.    143.    109.     36.     34.     34.     34.     34.
224              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
225              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
```

```
                    * DDM   ***** Preserved *****

226                 KK  RET61B
227                 KM   RETAIN 100YR 2HR VOLUME
228                 DT    D61B      81
229                 DI       0   10000
230                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

231                 KK   CP61B
232                 KM   COMBINE FLOWS FROM S61A AND S61B
233                 HC       2
                    * DDM   ***** Preserved *****

234                 KK  61T62E
235                 KM    ROUTE S61B TO S62E. WASH CROSSING ELLSWORTH AT STAFF GAUGE
236                 RS       4    FLOW      -1
237                 RC    0.45    0.04    0.45    3500  0.0057
238                 RX       0     500     980    1006    1012    1035    1515    2015
239                 RY       5     4.5       4       0       0       4     4.5       5
                    *
                    * DDM   ***** Updated *****
1                                                HEC-1 INPUT
PAGE  7

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


240                 KK     62E
241                 KM   BASIN 62E
242                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
243                 KM    L=        .6  Lca=        .3   S=   31.9  Kn= .050  LAG=  20.4
244                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
245                 BA     .15
246                 LG     .25     .25    4.65     .39   45.00
247                 UI     29.    108.    163.    268.    246.    167.    104.     46.     28.     10.
248                 UI      8.      8.      0.      0.      0.      0.      0.      0.      0.      0.
249                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

250                 KK  RET62E
251                 KM   RETAIN 100YR 2HR VOLUME
252                 DT    D62E      12
253                 DI       0   10000
254                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

255                 KK    C62E
256                 KM   COMBINE FLOWS FROM SUBBASIN 61 AND 62E
257                 HC       2
                    * DDM   ***** Preserved *****

258                 KK   62ETF
259                 KM   ROUTE SUBBASIN 62E TO 62F VIA WASH AT 96TH ST
260                 RS       4    FLOW      -1
261                 RC    .045     .04    .045    3250   .0061
262                 RX       0     500    1000    1003    1005    1008    1508    2008
263                 RY       4       3       2       0       0       2       3       4
                    * DDM   ***** Updated *****

264                 KK     62A
265                 KM   BASIN 62A
266                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
267                 KM    L=        .8  Lca=        .5   S=   30.0  Kn= .020  LAG=  10.2
268                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
269                 BA     .38
270                 LG     .10     .25    4.50     .52   80.00
271                 UI    335.   1057.   1010.    367.     93.     38.      0.      0.      0.      0.
```

```
 272          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 273          KK  RET62A
 274          KM   RETAIN 100YR 2HR VOLUME
 275          DT    D62A      33
 276          DI       0   10000
 277          DQ       0   10000
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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      LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 278          KK   62ATD
 279          KM   ROUTE 62A TO 62D VIA WASH CROSSING DIAGONALLY SOUTH OF BASELINE TO HAWES
 280          RS       7    FLOW      -1
 281          RC    .045     .04    .045    6500   .0061
 282          RX       0     250     500     503     505     508     758    1008
 283          RY       3    2.75     2.5       0       0     2.5    2.75     3.0
              * DDM   ***** Updated *****

 284          KK     62B
 285          KM   BASIN 62B
 286          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 287          KM    L=        .6  Lca=        .3   S=   47.5  Kn= .021  LAG=   8.0
 288          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 289          BA     .23
 290          LG     .11     .25    4.65     .46   78.00
 291          UI    334.    940.    431.     83.      0.      0.      0.      0.      0.      0.
 292          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 293          KK  RET62B
 294          KM   RETAIN 100YR 2HR VOLUME
 295          DT    D62B      19
 296          DI       0   10000
 297          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 298          KK   62BTD
 299          KM   ROUTE 62B TO 62D VIA HAWES ROAD
 300          RS       6    FLOW      -1
 301          RC    .045     .04    .045    5280   .0041
 302          RX       0     100     125     127     177     179     224     324
 303          RY       3       2     1.5       0       0     1.5       2       3
              *
              * DDM   ***** Updated *****

 304          KK     62D
 305          KM   BASIN 62D
 306          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 307          KM    L=        .9  Lca=        .3   S=   30.7  Kn= .045  LAG=  21.3
 308          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 309          BA     .46
 310          LG     .23     .25    4.65     .40   50.00
 311          UI     76.    300.    519.    753.    475.    369.    286.    203.    163.    111.
 312          UI     85.     63.     47.     36.     26.     14.     14.     14.     14.      0.
 313          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 314          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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      LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
315          KK   ET62D
316          KM   RETAIN 100YR 2HR VOLUME
317          DT    D62D      35
318          DI       0   10000
319          DQ       0   10000
             *
             * DDM   ***** Preserved *****

320          KK   CP62D
321          KM   COMBINE FLOWS FROM SUBBASINS 62A, 62B, AND 62D
322          HC       3
             *
             * DDM   ***** Preserved *****

323          KK   62DTF
324          KM   ROUTE 62D TO 62F VIA HAWES ROAD
325          RS       4    FLOW      -1
326          RC    .045    .024    .045    3600   .0033
327          RX       0     500     750     753     793     796    1046    1546
328          RY       3     1.5    1.25       0       0    1.25     1.5       3
             *
             * DDM   ***** Updated *****

329          KK     62C
330          KM   BASIN 62C
331          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
332          KM    L=        .6  Lca=        .3   S=   24.2  Kn= .049  LAG=  19.8
333          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
334          BA     .55
335          LG     .23     .25    4.65     .40   47.00
336          UI    112.    406.    615.   1024.    853.    571.    330.    154.     83.     28.
337          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
338          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

339          KK  RET62C
340          KM   RETAIN 100YR 2HR VOLUME
341          DT    D62C      31
342          DI       0   10000
343          DQ       0   10000
             *
             * DDM   ***** Preserved *****

344          KK   62CTF
345          KM   ROUTE 62C TO 62F VIA NATURAL WASH
346          RS       5    FLOW      -1
347          RC    .045    .040    .045    4400   .0061
348          RX       0     450     500     503     505     558     758    1008
349          RY       4       3       2       0       0       2     2.5       4
             *
             * DDM   ***** Updated *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

350          KK     62F
351          KM   BASIN 62F
352          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
353          KM    L=        .6  Lca=        .4   S=   31.9  Kn= .042  LAG=  18.1
354          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
355          BA     .26
356          LG     .21     .25    4.65     .41   54.00
357          UI     66.    224.    350.    546.    371.    235.     98.     56.     18.     15.
358          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
359          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```

```
                    * DDM   ***** Preserved *****

360                 KK  RET62F
361                 KM   RETAIN 100YR 2HR VOLUME
362                 DT    D62F      18
363                 DI       0   10000
364                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

365                 KK    CP62
366                 KM   COMBINE FLOWS FROM SUBBASINS 62D, 62E AND 62F AND 62C
367                 HC       4
                    * DDM   ***** Preserved *****

368                 KK   62T63
369                 KM     ROUTE CP62 TO S63 viA WASH.
370                 KM     WASH CROSSING HAWES, NORTH OF ELLIOT
371                 RS       7    FLOW      -1
372                 RC    .045     .04     .045    6000  0.0055
373                 RX       0     500     750     770     780     800    1050    1550
374                 RY       5       4       3       0       0       3       4       5
                    * DDM   ***** Updated *****

375                 KK      63
376                 KM   BASIN 63
377                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
378                 KM    L=      1.4  Lca=       .7   S=   28.2  Kn= .035  LAG=  26.8
379                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
380                 BA     .91
381                 LG     .18     .25    4.65     .43   55.00
382                 UI    114.    346.    595.    780.   1159.   1291.    930.    689.    485.    241.
383                 UI    170.    113.     35.     35.     35.     35.      0.      0.      0.      0.
384                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

385                 KK   RET63
386                 KM   RETAIN 100YR 2HR VOLUME
387                 DT     D63      71
388                 DI       0   10000
389                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 11

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


390                 KK    CP63
391                 KM     COMBINE S63 AND CP62
392                 HC       2
                    * DDM   ***** Preserved *****

393                 KK   63T71
394                 KM     ROUTE CP63 TO S71 VIA SHEET FLOW
395                 KM     SOSSAMAN SOUTH OF ELLIOT
396                 RS       6    FLOW      -1
397                 RC    .055    .045    .055    5280  0.0005
398                 RX       0    1000    1005    1010    1013    1043    1543    2043
399                 RY       6       5       0       0       3       5       2       5
                    *
                    * DDM   ***** Preserved *****

400                 KK  ADOT-E
401                 KM   INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY ENTERING 67A
402                 KM   FROM EAST ADOT DETENTION BASIN 4105.
403                 BA    0.01
404                 ZR  =QI A=ADOT EAST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
                    *
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                 * DDM   ***** Preserved *****

405              KK  AET67A
406              KM    ROUTE SUPERSTITION FLOW THROUGH 67A TO BASELINE ROAD
407              IN      15
408              RS       6    FLOW      -1
409              RC    .045    .040    .045    5500     .01
410              RX       0     100     110     120     130     140     150     250
411              RY       5       4       3       1       1       3       4       5
                 *
                 * DDM   ***** Updated *****

412              KK     67A
413              KM   BASIN 67A
414              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
415              KM    L=       1.0  Lca=        .7   S=   42.9  Kn= .042  LAG=  25.7
416              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
417              BA     .30
418              LG     .21     .25    4.70     .39   43.00
419              UI     39.    126.    208.    277.    433.    400.    292.    213.    134.     67.
420              UI     47.     25.     12.     12.     12.      0.      0.      0.      0.      0.
421              UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

422              KK  RET67A
423              KM   RETAIN 100YR 2HR VOLUME
424              DT    D67A      21
425              DI       0   10000
426              DQ       0   10000
                 *
                 * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 12

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


427              KK    C67A
428              KM    COMBINE FLOWS FROM SUP3 AND SUBBASIN 67A
429              HC       2
                 *
                 * DDM   ***** Preserved *****

430              KK   67ATC
431              KM   ROUTE 67A TO 67C VIA WASH CROSSING BASELINE
432              RS       7    FLOW      -1
433              RC    .055    .045    .055    6300   .0071
434              RX       0     500     980    1003    1007    1031    1511    2011
435              RY       4     3.5       3       0       0       3     3.5       4
                 *
                 * DDM   ***** Preserved *****

436              KK    SUP2
437              KM   INFLOW FROM NORTH OF SUPERSTITION FREEWAY, DISCHARGING INTO 67B
438              BA    0.01
439              ZR  =QI A=ADOT WEST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
                 *
                 * DDM   ***** Preserved *****

440              KK   RSUP2
441              KM   ROUTE SUP2 THROUGH SUBBASIN 67B
442              IN      15
443              RS       5    FLOW      -1
444              RC    .045    .045    .045    4500   .0056
445              RX       0     500    1000    1003    1007    1011    1511    2011
446              RY       4     3.5       3       0       0       2     2.5       3
                 *
                 * DDM   ***** Updated *****

447              KK     67B
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```
448          KM   BASIN 67B
449          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
450          KM    L=       1.2  Lca=        .9   S=   28.0  Kn= .034  LAG=  26.4
451          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
452          BA     .53
453          LG     .17      .25     4.90      .38   56.00
454          UI     68.     210.     356.     470.    713.     741.     536.     395.     269.     131.
455          UI     94.      59.      21.      21.     21.       0.       0.       0.       0.       0.
456          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

457          KK  RET67B
458          KM   RETAIN 100YR 2HR VOLUME
459          DT    D67B      41
460          DI       0   10000
461          DQ       0   10000
             *
             *
             * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


462          KK    C67B
463          KM   COMBINE FLOWS FROM SUP2 AND SUBBASIN 67B
464          HC       2
             * DDM   ***** Preserved *****

465          KK   67BTC
466          KM   ROUTE SUBBASIN 67B TO 67C ALONG CRISMON ROAD
467          KM   DIRT CHANNEL WITH MUCH VEGETATION, LEFT BANK DESERT, RIGHT BANK IS AG FIELD
468          RS       9    FLOW      -1
469          RC    .045     .055     .065    5280   .0046
470          RX       0      500     1000    1003    1018    1021    1556    2056
471          RY       8        7        6       1       1       6       7       8
             *
             * DDM   ***** Updated *****

472          KK     67C
473          KM   BASIN 67C
474          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
475          KM    L=       1.2  Lca=        .7   S=   40.2  Kn= .049  LAG=  32.3
476          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
477          BA     .93
478          LG     .25      .25     5.10      .32   31.00
479          UI     96.     213.     432.     557.    702.    1006.    1133.     842.     667.     518.
480          UI    365.     193.     157.      96.     59.      30.      30.      30.      30.       0.
481          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
482          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

483          KK  RET67C
484          KM   RETAIN 100YR 2HR VOLUME
485          DT    D67C      67
486          DI       0   10000
487          DQ       0   10000
             *
             * DDM   ***** Preserved *****

488          KK    C67C
489          KM   COMBINE SUBBASINS 67C AND 67A AND 67B
490          HC       3
             *
             * DDM   ***** Preserved *****

491          KK   67CTE
492          KM   ROUTE 67C TO 67E, (THIS FLOW IS ROUTED DIFFERENTLY THAN 67D)
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```
493          RS       7    FLOW      -1
494          RC    .045    .045    .045    6500    .0061
495          RX       0     500    1000    1012    1016    1060    1560    2060
496          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

497          KK     67D
498          KM   BASIN 67D
499          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
500          KM    L=        .6  Lca=        .4   S=   34.7  Kn= .050  LAG=  20.5
501          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
502          BA     .13
503          LG     .25     .25    5.20     .30   30.00
504          UI     23.     87.    132.    216.    202.    137.     86.     38.     23.      9.
505          UI      6.      6.      0.      0.      0.      0.      0.      0.      0.      0.
506          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

507          KK  RET67D
508          KM   RETAIN 100YR 2HR VOLUME
509          DT    D67D       9
510          DI       0   10000
511          DQ       0   10000
             *
             * DDM   ***** Preserved *****

512          KK   67DTE
513          KM   ROUTE CONCENTRATION POINT 67D TO SUBBASIN 67E VIA WASH
514          RS       7    FLOW      -1
515          RC    .045    .045    .045    6000    .0053
516          RX       0     500    1000    1003    1007    1011    1511    2011
517          RY       5     4.5       3       0       0       3     4.5       5
             *
             * DDM   ***** Updated *****

518          KK     67E
519          KM   BASIN 67E
520          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
521          KM    L=       1.2  Lca=        .7   S=   32.3  Kn= .038  LAG=  26.9
522          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
523          BA     .58
524          LG     .19     .25    5.40     .30   50.00
525          UI     73.    219.    378.    496.    732.    830.    597.    443.    315.    157.
526          UI    110.     73.     24.     22.     22.     22.      0.      0.      0.      0.
527          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

528          KK  RET67E
529          KM   RETAIN 100YR 2HR VOLUME
530          DT    D67E      50
531          DI       0   10000
532          DQ       0   10000
             *
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

533          KK   CP67E
534          KM   COMBINE SUBBASINS 67E AND 67D, AND 67C
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```
535          HC       3
             *
             * DDM   ***** Preserved *****

536          KK   67T68
537          KM    ROUTE S67 TO S68 VIA WASH
538          RS       3    FLOW      -1
539          RC    .045     .04    .045    2500    .0068
540          RX       0     500     950    1003    1007    1057    1511    2011
541          RY       4     3.5       3       0       0       2     2.5       3
             * DDM   ***** Updated *****

542          KK     68A
543          KM   BASIN 68A
544          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
545          KM    L=        .7  Lca=        .4   S=   37.7  Kn= .032  LAG=  13.7
546          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
547          BA     .35
548          LG     .16     .25    5.70     .27   66.00
549          UI    168.    506.    914.    635.    301.    114.     34.     26.      0.      0.
550          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

551          KK  RET68A
552          KM   RETAIN 100YR 2HR VOLUME
553          DT    D68A      31
554          DI       0   10000
555          DQ       0   10000
             *
             * DDM   ***** Preserved *****

556          KK    C68A
557          KM   COMINE FLOWS FROM 67 AND 68A
558          HC       2
             *
             * DDM   ***** Preserved *****

559          KK   68ATB
560          KM   ROUTE S68A TO S68B VIA WASH
561          RS       3    FLOW      -1
562          RC    .045     .04    .045    2500    .006
563          RX       0     500     950    1003    1007    1057    1511    2011
564          RY       4     305       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****
```



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                                        HEC-1 INPUT

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


565          KK     68B
566          KM   BASIN 68B
567          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
568          KM    L=        .6  Lca=        .3   S=   32.3  Kn= .020  LAG=   7.7
569          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
570          BA     .25
571          LG     .10     .25    5.20     .36   80.00
572          UI    377.   1018.    412.     72.      0.      0.      0.      0.      0.      0.
573          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

574          KK  RET68B
575          KM   RETAIN 100YR 2HR VOLUME
576          DT    D68B      24
577          DI       0   10000
578          DQ       0   10000
             *
             * DDM   ***** Preserved *****
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```
579          KK   CP68B
580          KM   COMBINE S68A AND S68B
581          HC       2
             *
             * DDM   ***** Preserved *****

582          KK  68BT69
583          KM   ROUTE S68B TO S69 VIA WASH CROSSING HAWES
584          RS       3    FLOW      -1
585          RC    .045     .04    .045    2750   .0036
586          RX       0     500     950    1003    1007    1057    1511    2011
587          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

588          KK      69
589          KM   BASIN 69
590          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
591          KM    L=        .7  Lca=        .3   S=   22.4  Kn= .020  LAG=   9.0
592          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
593          BA     .09
594          LG     .10     .25    4.70     .45   80.00
595          UI    104.    320.    213.     54.     11.      0.      0.      0.      0.      0.
596          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

597          KK   RET69
598          KM   RETAIN 100YR 2HR VOLUME
599          DT     D69       9
600          DI       0   10000
601          DQ       0   10000
             *
             * DDM   ***** Preserved *****
```



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                                          HEC-1 INPUT

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

602          KK     C69
603          KM   COMBINE FLOWS FROM C68B AND 69
604          HC       2
             *
             * DDM   ***** Preserved *****

605          KK   69T71
606          KM     ROUTE S69 TO S71 VIA WASH AND SHEET FLOW, INCREASE OVERBANK N VALUES
607          RS       7    FLOW      -1
608          RC    .055    .045    .055    6000   .0033
609          RX       0     500    1000    1001    1002    1500    2000    2500
610          RY       4       3       2       0       0       2       3       4
             *
             * DDM   ***** Updated *****

611          KK      71
612          KM   BASIN 71
613          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
614          KM    L=       1.6  Lca=        .8   S=   26.4  Kn= .020  LAG=  16.8
615          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
616          BA    1.09
617          LG     .10     .25    4.65     .47   80.00
618          UI    331.   1085.   1805.   2349.   1459.    780.    329.    144.     67.     67.
619          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
620          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

621          KK   RET71
622          KM   RETAIN 100YR 2HR VOLUME
```

```
623          DT     D71     106
624          DI       0   10000
625          DQ       0   10000
             *
             * DDM   ***** Preserved *****

626          KK    CP71
627          KM   COMBINE S71 WITH S69 AND S68B
628          HC       3
             *
             * DDM   ***** Preserved *****

629          KK   71T72
630          KM    ROUTE CP71 TO S72 VIA DIKE
631          KM     WASH WEST OF INTERSECTION OF SOSSAMAN & WARNER
632          RS       4    FLOW      -1
633          RC    .055    .045    .055    3750   .0037
634          RX       0     500    1000    1007    1017    1025    1530    2030
635          RY       9     8.5       8       0       0       8     8.5       9
             *
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


636          KK  EMFWAR
637          KM   COMBINE ROUTED FLOW FROM 71 WITH EMF
638          HC       2
             * DDM   ***** Preserved *****

639          KK  WARTKN
640          KM   ROUTE EMF WARNER ROAD FLOW TO KNOX ROAD
641          RS       1    FLOW      -1
642          RC     .03    .022     .03    2500   .0003
643          RX       0     500     520     553     693     726     740     742
644          RY      14      12      11       0       0      11      11      12
             *
             * DDM   ***** Preserved *****

645          KK   CAP1A
646          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
647          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
648          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
649          IN      60
650          BA     .01
651          QI       0      65     217     217     217     217     217     217     217     217
652          QI     217     217     217     217     217     217     217     217     217     217
653          QI     217     217     217     217     217
             *
             * DDM   ***** Preserved *****

654          KK  RCAP1A
655          KM   ROUTE CAP1A THROUGH 65A AND 65AW
656          RS       9    FLOW      -1
657          RC    .045     .04    .045    8000   .0088
658          RX       0     500    1000    1006    1026    1032    1511    2011
659          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Preserved *****

660          KK   CAP1B
661          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
662          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
663          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
664          IN      60
665          BA     .01
666          QI       0      65     217     217     217     217     217     217     217     217
667          QI     217     217     217     217     217     217     217     217     217     217
668          QI     217     217     217     217     217
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                    *
                    * DDM   ***** Preserved *****

669                 KK  RCAP1B
670                 KM   ROUTE CAP1B THROUGH 65A AND 65AW
671                 RS       9    FLOW      -1
672                 RC    .045     .04    .045    8500    .008
673                 RX       0     500    1000    1006    1026    1032    1511    2011
674                 RY       4     3.5       3       0       0       3     3.5       4
                    *
                    * DDM   ***** Updated *****
1                                                HEC-1 INPUT
PAGE 19

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


675                 KK    65AW
676                 KM   BASIN 65AW
677                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
678                 KM    L=        .9  Lca=        .6   S=   54.7  Kn= .049  LAG=  26.1
679                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
680                 BA     .43
681                 LG     .24     .25    5.30     .29   32.00
682                 UI     56.    176.    295.    391.    603.    594.    432.    316.    210.    101.
683                 UI     73.     43.     17.     17.     17.      0.      0.      0.      0.      0.
684                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

685                 KK  RE65AW
686                 KM   RETAIN 100YR 2HR VOLUME
687                 DT   D65AW      31
688                 DI       0   10000
689                 DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

690                 KK   C65AW
691                 KM   COMBINE FLOWS FROM CAP OVERCHUTES 1A AND 1B AND SUBBASIN 65AW
692                 HC       3
                    *
                    * DDM   ***** Preserved *****

693                 KK  65AWTB
694                 KM   ROUTE C65AW (AT GUADALUPE RD AND MOUNTAIN RD ALIGNMENT) THROUGH SUBBASIN 65B
695                 KM   TO CRISMON RD AND ELLIOT RD. NATURAL CHANNEL
696                 RS      12    FLOW      -1
697                 RC    .045     .04    .045   10800   .0065
698                 RX       0     500    1000    1006    1026    1032    1511    2011
699                 RY       4     3.5       3       0       0       3     3.5       4
                    * DDM   ***** Updated *****

700                 KK     65A
701                 KM   BASIN 65A
702                 KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
703                 KM    L=       1.6  Lca=        .9   S=   51.2  Kn= .053  LAG=  41.5
704                 KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
705                 BA    2.54
706                 LG     .15     .25    5.10     .35   59.00
707                 UI    206.    248.    735.   1001.   1188.   1423.   1760.   2487.   2309.   1835.
708                 UI   1546.   1269.   1035.    777.    457.    351.    292.    206.    143.     63.
709                 UI     63.     63.     63.     63.      0.      0.      0.      0.      0.      0.
710                 UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * KKRET65A
                    * KM RETAIN 100YR 2HR VOLUME - BECAUSE OF UNCERTAIN RETENTION ENFORCEMENT IN
                    * KM  PINAL COUNTY NO RETENTION IS ASSUMED
                    * DT  D65A       0
                    * DI     0   10000
                    * DQ     0   10000
```

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                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 711                KK   65ATB
 712                KM   ROUTE 65A TO 65B VIA SIPHON DRAW
 713                RS       8    FLOW      -1
 714                RC    .045     .04    .045   11500   .0003
 715                RX       0     500    1000    1003    1053    1056    1511    2011
 716                RY       4     3.5       3       0       0       2     2.5       3
                    *
                    * DDM   ***** Updated *****

 717                KK     65B
 718                KM   BASIN 65B
 719                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 720                KM    L=       2.0  Lca=       1.2   S=   37.5  Kn= .036  LAG=  36.6
 721                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 722                BA    1.37
 723                LG     .18     .25    6.00     .24   53.00
 724                UI    126.    218.    506.    669.    809.   1014.   1468.   1422.   1102.    901.
 725                UI    720.    562.    337.    218.    182.    126.     71.     39.     39.     39.
 726                UI     39.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 727                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

 728                KK  RET65B
 729                KM   RETAIN 100YR 2HR VOLUME
 730                DT    D65B     120
 731                DI       0   10000
 732                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

 733                KK   CP65B
 734                KM   COMBINE S65A WITH 65B
 735                HC       3
                    *
                    * DDM   ***** Preserved *****

 736                KK   65T66
 737                KM   ROUTE 65B TO 66D VIA GM PERIMETER CHANNEL
 738                RS       3    FLOW      -1
 739                RC    0.05   0.045   0.045    4500   0.005
 740                RX       0      20      25      30      38      43     100     200
 741                RY      12       8       8       0       0       5       6       7
                    *
                    * DDM   ***** Updated *****

 742                KK     66A
 743                KM   BASIN 66A
 744                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 745                KM    L=        .7  Lca=        .3   S=   55.9  Kn= .047  LAG=  17.1
 746                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 747                BA     .26
 748                LG     .24     .25    6.00     .22   35.00
 749                UI     78.    256.    417.    576.    363.    205.     84.     39.     16.     16.
1                                                HEC-1 INPUT
PAGE 21

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

 750                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 751                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
```

```
752          KK  RET66A
753          KM   RETAIN 100YR 2HR VOLUME
754          DT    D66A      21
755          DI       0   10000
756          DQ       0   10000
             *
             * DDM   ***** Preserved *****

757          KK   66ATB
758          KM   ROUTE S66A TO 66B VIA WASH CROSSING BASELINE
759          RS       8    FLOW      -1
760          RC    .045     .04    .045    7500    .0077
761          RX       0     500     980    1003    1007    1031    1511    2011
762          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Updated *****

763          KK     66B
764          KM   BASIN 66B
765          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
766          KM    L=      1.6  Lca=      1.0   S=   43.3  Kn= .050  LAG=  42.8
767          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
768          BA     .67
769          LG     .25     .25    5.00     .33   30.00
770          UI     53.     56.    185.    248.    297.    352.    426.    590.    636.    496.
771          UI    419.    346.    286.    232.    152.     93.     86.     58.     53.     21.
772          UI     16.     16.     16.     16.     16.      0.      0.      0.      0.      0.
773          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

774          KK  RET66B
775          KM   RETAIN 100YR 2HR VOLUME
776          DT    D66B      48
777          DI       0   10000
778          DQ       0   10000
             *
             * DDM   ***** Preserved *****

779          KK   CP66B
780          KM   COMBINE S66A AND S66B
781          HC       2
             * DDM   ***** Preserved *****

782          KK   66BTC
783          KM   ROUTE 66B TO 66C VIA WASH
784          RS       7    FLOW      -1
785          RC    .045     .04    .045    6000    .0073
786          RX       0     500     995    1003    1007    1016    1511    2011
787          RY       4     3.5       3       0       0       3     3.5       4
             *
             * DDM   ***** Updated *****
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                                          HEC-1 INPUT

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

788          KK     66C
789          KM   BASIN 66C
790          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
791          KM    L=      1.1  Lca=       .7   S=   46.5  Kn= .039  LAG=  24.3
792          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
793          BA     .50
794          LG     .19     .25    5.40     .29   48.00
795          UI     69.    243.    385.    528.    817.    635.    463.    325.    159.    103.
796          UI     63.     21.     21.     21.      0.      0.      0.      0.      0.      0.
797          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****
```

```
 798          KK  RET66C
 799          KM   RETAIN 100YR 2HR VOLUME
 800          DT    D66C      42
 801          DI       0   10000
 802          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 803          KK   CP66C
 804          KM   COMBINE S66C AND S66B
 805          HC       2
              *
              * DDM   ***** Preserved *****

 806          KK   66CTD
 807          KM   ROUTE 66C TO 66D VIA WASH
 808          RS       6    FLOW      -1
 809          RC    .045     .04    .045    5500    .0055
 810          RX       0     500     970    1003     1007    1031    1511    2011
 811          RY       4     3.5       3       0        0       3     3.5       4
              *
              * DDM   ***** Updated *****

 812          KK     66D
 813          KM   BASIN 66D
 814          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 815          KM    L=      1.0  Lca=       .7   S=   28.6  Kn= .020  LAG=  13.2
 816          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 817          BA     .31
 818          LG     .10     .17    6.80     .19   80.00
 819          UI    162.    480.    845.    540.    232.     89.     24.      0.      0.      0.
 820          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 821          KK  RET66D
 822          KM   RETAIN 100YR 2HR VOLUME
 823          DT    D66D      31
 824          DI       0   10000
 825          DQ       0   10000
              *
              * DDM   ***** Preserved *****
```



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                                   HEC-1 INPUT

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


 826          KK    C66D
 827          KM   COMBINE 66D AND 66C
 828          HC       2
              *
              * DDM   ***** Preserved *****

 829          KK    CP66
 830          KM   COMBINE FLOWS FROM C66D AND C65
 831          HC       2
              *
              * DDM   ***** Preserved *****

 832          KK  66DT70
 833          KM   ROUTE 66D TO 70A VIA GM CHANNEL. WASH N AND W OF GMPG INCLUDING CHANNEL
 834          KM   FLOWS CROSSING ELLSWORTH SOUTH OF ELLIOT
 835          RS       4    FLOW      -1
 836          RC    .055     .045    .055    3500    .0054
 837          RX       0     100     950    1050     1060    1163    1663    2000
 838          RY       5       4       3       0        0       3       4       5
              *
              * DDM   ***** Updated *****
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```
839          KK     70A
840          KM   BASIN 70A
841          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
842          KM    L=        .9  Lca=        .4   S=   23.5  Kn= .025  LAG=  12.7
843          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
844          BA     .54
845          LG     .13      .15     7.60      .13   67.00
846          UI    306.     899.    1524.     903.    346.     120.      44.       0.       0.       0.
847          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

848          KK  RET70A
849          KM   RETAIN 100YR 2HR VOLUME
850          DT    D70A      52
851          DI       0   10000
852          DQ       0   10000
             *
             * DDM   ***** Preserved *****

853          KK    C70A
854          KM   COMBINE FLOWS FROM C66 AND 70A
855          HC       2
             *
             * DDM   ***** Preserved *****

856          KK   70ATB
857          KM   ROUTE 70A TO 70B VIA WARNER ROAD
858          RS       7    FLOW      -1
859          RC    .045     .035     .045    6000    .0046
860          RX       0      100      950    1050     1060    1163     1663     2000
861          RY       5        4        3       0        0       3        4        5
             *
             * DDM   ***** Updated *****
1                                                HEC-1 INPUT
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

862          KK     70B
863          KM   BASIN 70B
864          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
865          KM    L=       1.6  Lca=       1.1   S=   29.9  Kn= .022  LAG=  20.7
866          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
867          BA     .38
868          LG     .11      .15     8.00      .12   76.00
869          UI     68.     259.     390.     636.    615.     418.     267.     119.      73.      30.
870          UI     19.      19.       0.       0.      0.       0.       0.       0.       0.       0.
871          UI      0.       0.       0.       0.      0.       0.       0.       0.       0.       0.
             *
             * DDM   ***** Preserved *****

872          KK  RET70B
873          KM   RETAIN 100YR 2HR VOLUME
874          DT    D70B      38
875          DI       0   10000
876          DQ       0   10000
             *
             * DDM   ***** Preserved *****

877          KK   CP70B
878          KM   COMBINE S70A WITH S70B
879          HC       2
             * DDM   ***** Preserved *****

880          KK  70BT76
881          KM   ROUTE 70B TO 76B VIA WASH CROSSING SOSSAMAN, SOUTH OF WARNER ROAD
882          RS       6    FLOW      -1
883          RC    .045      .04     .045    5500    .0041
884          RX       0      500     1000    1003     1007    1011     1511     2011
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885          RY       4     3.5       3       0       0       2     2.5       3
             *
             * DDM   ***** Updated *****

886          KK     76B
887          KM   BASIN 76B
888          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
889          KM    L=       1.8  Lca=        .9   S=   27.4  Kn= .021  LAG=  18.9
890          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
891          BA     .64
892          LG     .10      .15    8.80     .09   78.00
893          UI    148.     515.    789.   1294.    957.    629.    303.    157.     70.     35.
894          UI     35.       0.      0.      0.      0.      0.      0.      0.      0.      0.
895          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

896          KK  RET76B
897          KM   RETAIN 100YR 2HR VOLUME
898          DT    D76B      66
899          DI       0   10000
900          DQ       0   10000
             *
             * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 25

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


901          KK   CP76B
902          KM   COMBINE FLOW FROM C76B AND EMFKNX
903          HC       2
             *
             * DDM   ***** Updated *****

904          KK      72
905          KM   BASIN 72
906          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
907          KM    L=       1.6  Lca=        .9   S=   13.1  Kn= .020  LAG=  20.3
908          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
909          BA     .84
910          LG     .10      .25    5.40     .33   80.00
911          UI    161.     600.    906.   1496.   1347.    912.    566.    247.    153.     50.
912          UI     43.      43.      0.      0.      0.      0.      0.      0.      0.      0.
913          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

914          KK   RET72
915          KM   RETAIN 100YR 2HR VOLUME
916          DT     D72      88
917          DI       0   10000
918          DQ       0   10000
             *
             * DDM   ***** Preserved *****

919          KK    KNOX
920          KM   COMBINE FLOWS AT KNOX ROAD BEFORE ENTERING INTO THE EMF
921          HC       2
             *
             * DDM   ***** Preserved *****

922          KK  EMFKNX
923          KM   COMBINE FLOWS INTO THE EMF AT KNOX ROAD
924          HC       2
             *
             * DDM   ***** Preserved *****

925          KK  KNXTRY
926          KM   ROUTE EMF KNOX ROAD FLOW TO RAY ROAD
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```
927          RS       1    FLOW      -1
928          RC     .03    .022     .03    3000    .0003
929          RX       0     500     520     553     693     726     740     742
930          RY      14      12      11       0       0      11      11      12
             *
             * DDM   ***** Updated *****

931          KK     76A
932          KM   BASIN 76A
933          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
934          KM    L=      2.9  Lca=      1.7   S=   24.1  Kn= .030  LAG=  42.9
935          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
936          BA    1.91
1                                          HEC-1 INPUT
PAGE 26

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

937          LG     .15     .15    8.80     .08   56.00
938          UI    150.    159.    528.    707.    847.   1004.   1213.   1673.   1826.   1424.
939          UI   1201.    992.    822.    667.    444.    266.    247.    171.    150.     65.
940          UI     46.     46.     46.     46.     46.      0.      0.      0.      0.      0.
941          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * DDM   ***** Preserved *****

942          KK  RET76A
943          KM   RETAIN 100YR 2HR VOLUME
944          DT    D76A     185
945          DI       0   10000
946          DQ       0   10000
             *
             * DDM   ***** Preserved *****

947          KK  EMFRAY
948          KM   COMBINE FLOWS IN THE EMF AT RAY ROAD
949          KM   EMF UPSTREAM OF POWERLINE
950          HC       2
             *
             * DDM   ***** Updated *****

951          KK     73A
952          KM   BASIN 73A
953          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
954          KM    L=      2.3  Lca=      1.0   S=   34.9  Kn= .093  LAG=  94.5
955          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
956          BA     .95
957          LG     .35     .36    5.00     .27     .00
958          UI     34.     34.     34.     34.     84.    117.    134.    158.    171.    185.
959          UI    197.    214.    232.    254.    274.    317.    381.    429.    424.    369.
960          UI    332.    303.    282.    263.    240.    220.    202.    185.    169.    157.
961          UI    134.    107.     90.     60.     60.     57.     55.     54.     34.     34.
962          UI     34.     34.     16.     10.     10.     10.     10.     10.     10.     10.
963          UI     10.     10.     10.     10.     10.     10.      0.      0.      0.      0.
964          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             * KKRET73A
             * KM RETAIN 100YR 2HR VOLUME
             * KM SINCE RETENTION ENFORCEMENT CAN NOT BE GUARANTEED IN PINAL COUNTY NO
             * KM RETENTION IS ASSUMED
             * DT  D73A       0
             * DI     0   10000
             * DQ     0   10000
             *
             * DDM   ***** Preserved *****

965          KK   73ATB
966          KM   ROUTE 73A TO 73B VIA WASH RUNNING DIAGONALLY ACROSS 73B
967          RS       3    FLOW      -1
968          RC     .06     .05     .06    2700    .0074
969          RX       0     500    1000    1003    1007    1011    1511    2011
```

```
 970          RY       4     3.5       3       0       0       2     2.5       3
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 971          KK     73B
 972          KM   BASIN 73B
 973          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 974          KM    L=        .6  Lca=        .4   S=   26.3  Kn= .050  LAG=  21.6
 975          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 976          BA     .42
 977          LG     .27     .25    5.30     .27   21.00
 978          UI     67.    268.    402.    621.    719.    486.    332.    162.     94.     50.
 979          UI     20.     20.      0.      0.      0.      0.      0.      0.      0.      0.
 980          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 981          KK  RET73B
 982          KM   RETAIN 100YR 2HR VOLUME
 983          DT    D73B      29
 984          DI       0   10000
 985          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 986          KK   CP73B
 987          KM   COMBINE S73A AND S73B
 988          HC       2
              *
              * DDM   ***** Preserved *****

 989          KK   73BTC
 990          KM   ROUTE 73B TO 73C VIA WASH CROSSING MOUNTAIN ROAD
 991          KM    THEN ROUTED SOUTH ALONG GENERAL MOTORS BERM TO SW CORNING OF 73C
 992          RS       6    FLOW      -1
 993          RC    .035    .022    .035    5000   .0036
 994          RX       0     500    1000    1003    1007    1011    1511    2011
 995          RY       5     4.5       3       0       0       3     4.5       5
              *
              * DDM   ***** Updated *****

 996          KK     73C
 997          KM   BASIN 73C
 998          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 999          KM    L=        .6  Lca=        .3   S=   43.7  Kn= .020  LAG=   7.0
1000          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1001          BA     .58
1002          LG     .10     .25    5.30     .34   80.00
1003          UI   1073.   2551.    742.    111.      0.      0.      0.      0.      0.      0.
1004          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
PAGE 28

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


1005          KK  RET73C
1006          KM   RETAIN 100YR 2HR VOLUME
1007          DT    D73C      58
1008          DI       0   10000
1009          DQ       0   10000
              *
              * DDM   ***** Preserved *****
```

```
1010          KK   CP73C
1011          KM   COMBINE 73C AND 73B
1012          HC       2
              *
              * DDM   ***** Preserved *****

1013          KK  73T74C
1014          KM   ROUTE 73C TO 74C VIA GM BERM, WEST EDGE OF 74C
1015          RS       4    FLOW      -1
1016          RC    .035    .022    .035    3500    .0034
1017          RX       0     500    1000    1001    1016    1516    2016    2516
1018          RY       6     5.5       5       2       2     3.5     4.5     5.5
              *
              * DDM   ***** Updated *****

1019          KK     74A
1020          KM   BASIN 74A
1021          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1022          KM    L=       2.4  Lca=       1.0   S=   42.2  Kn= .095  LAG=  92.9
1023          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1024          BA     .75
1025          LG     .35     .36    5.00     .27     .00
1026          UI     27.     27.     27.     27.     73.     96.    111.    129.    140.    151.
1027          UI    163.    175.    193.    208.    228.    268.    317.    362.    327.    287.
1028          UI    260.    239.    222.    206.    187.    171.    160.    142.    132.    118.
1029          UI     99.     79.     56.     48.     47.     45.     45.     32.     27.     27.
1030          UI     27.     19.      8.      8.      8.      8.      8.      8.      8.      8.
1031          UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
1032          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET74A
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION ASSUMED, NO GUARANTEES ON RETENTION
              * KM ENFORCEMENT IN PINAL COUNTY
              * DT  D74A       0
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****

1033          KK   74ATB
1034          KM   ROUTE 74A TO 74B VIA WASH CROSSING COUNTY LINE
1035          RS       4    FLOW      -1
1036          RC    .045     .04    .045    3500    .0054
1037          RX       0     500    1000    1003    1007    1011    1511    2011
1038          RY       4     3.5       3       0       0       2     2.5       3
              *
              * DDM   ***** Updated *****
```



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                                    HEC-1 INPUT

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

1039          KK     74B
1040          KM   BASIN 74B
1041          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1042          KM    L=        .6  Lca=        .5   S=   32.1  Kn= .050  LAG=  23.3
1043          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1044          BA     .33
1045          LG     .30     .25    6.00     .18    5.00
1046          UI     48.    177.    273.    388.    563.    406.    289.    188.     87.     58.
1047          UI     28.     15.     15.      0.      0.      0.      0.      0.      0.      0.
1048          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1049          KK  RET74B
1050          KM   RETAIN 100YR 2HR VOLUME
1051          DT    D74B      22
1052          DI       0   10000
1053          DQ       0   10000
```

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                 *
                 * DDM   ***** Preserved *****

1054             KK   CP74B
1055             KM   COMBINE S74A AND S74B
1056             HC       2
                 *
                 * DDM   ***** Preserved *****

1057             KK   74BTC
1058             KM   ROUTE 74B TO 74C VIA WASH CROSSING MOUNTAIN ROAD
1059             RS       4    FLOW      -1
1060             RC    .045     .04    .045    3500    .0051
1061             RX       0     500     980    1003    1007    1031    1511    2011
1062             RY       4     3.5       3       0       0       3     3.5       4
                 *
                 * DDM   ***** Updated *****

1063             KK     74C
1064             KM   BASIN 74C
1065             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1066             KM    L=        .7  Lca=        .5   S=   25.4  Kn= .020  LAG=  10.3
1067             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1068             BA     .34
1069             LG     .10     .15    7.00     .17   80.00
1070             UI    303.    950.    940.    348.     92.     35.      0.      0.      0.      0.
1071             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1072             KK  RET74C
1073             KM   RETAIN 100YR 2HR VOLUME
1074             DT    D74C      35
1075             DI       0   10000
1076             DQ       0   10000
                 *
                 * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
PAGE 30

LINE             ID.......1.......2.......3.......4.......5.

1077             KK   CP74C
1078             KM   COMBINE 74C AND 74B AND 73C
1079             HC       3
                 *
                 * DDM   ***** Preserved *****

1080             KK  74CT75
1081             KM    ROUTE CP74C TO S75 VIA POWERLINE FLOOI
1082             RS       3    FLOW      -1
1083             RC     .03    .013     .03   10560   .0049
1084             RX       0    1005    1023  1030.5  1036.5
1085             RY       6       5       5       0       0
                 *
                 * DDM   ***** Updated *****

1086             KK      75
1087             KM   BASIN 75
1088             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1089             KM    L=       4.0  Lca=       3.0   S=   20.0  Kn= .087  LAG= 182.0
1090             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1091             BA    4.01
1092             LG     .34     .35    6.80     .13    3.00
1093             UI     74.     74.     74.     74.     74.     74.     74.     74.    180.    243.
1094             UI    247.    284.    284.    335.    342.    363.    375.    396.    412.    422.
1095             UI    437.    458.    475.    495.    519.    550.    567.    585.    622.    672.
1096             UI    737.    819.    865.    935.   1002.    935.    870.    813.    764.    726.
1097             UI    693.    664.    637.    614.    593.    574.    547.    519.    496.    473.
1098             UI    452.    437.    425.    387.    377.    363.    347.    341.    289.    284.
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FOR SUB-BASIN 75, A RATIO VALUE OF 0.25 SHOULD BE ADDED IN FIELD 3 OF THE BA RECORD. SEE PAGE 20 OF THIS REPORT.

CWR 8/06

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1099          UI    233.    213.    213.    147.    131.    131.    131.    130.    122.    122.
1100          UI    122.    122.    122.     75.     74.     74.     74.     74.     74.     74.
1101          UI     74.     43.     23.     23.     23.     23.     23.     23.     23.     23.
1102          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
1103          UI     23.     23.     23.     23.     23.     23.     23.     23.      0.      0.
1104          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1105          KK    CP75
1106          KM   COMBINE FLOWS FROM C74C AND SUBBASIN 75
1107          HC       2
              *
              * DDM   ***** Preserved *****

1108          KK   75TCP
1109          KM   ROUTE 75 THROUGH POWERLINE FLOODWAY TO AIR FORCE CHANNEL
1110          RS       2    FLOW      -1
1111          RC     .03    .013     .03    6000    .0041
1112          RX       0    1005    1023  1030.5  1036.5    1044    1062    2067
1113          RY       6       5       5       0       0       5       5       6
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
PAGE 31

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


1114          KK     77A
1115          KM   BASIN 77A
1116          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1117          KM    L=       2.9  Lca=      1.5   S=   31.1  Kn= .092  LAG= 119.0
1118          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1119          BA    1.74
1120          LG     .35     .36    5.00     .27     .00
1121          UI     49.     49.     49.     49.     49.    108.    162.    185.    205.    230.
1122          UI    244.    264.    278.    293.    311.    333.    358.    380.    406.    462.
1123          UI    537.    584.    659.    601.    541.    496.    461.    430.    407.    385.
1124          UI    362.    334.    311.    293.    273.    252.    238.    226.    189.    161.
1125          UI    141.    104.     87.     87.     83.     81.     81.     73.     49.     49.
1126          UI     49.     49.     49.     22.     15.     15.     15.     15.     15.     15.
1127          UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
1128          UI     15.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1129          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET77A
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION, THERE IS A QUESTION OF RETENTION
              * KM ENFORCEMENT IN PINAL COUNTY
              * DT  D77A       0
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****

1130          KK   77ATB
1131          KM   ROUTE 77A TO 77B VIA WASH CROSSING COUNTY LINE
1132          RS       3    FLOW      -1
1133          RC    .045     .04    .045    3000    .006
1134          RX       0     500     980    1003    1007    1031    1511    2011
1135          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****

1136          KK     77B
1137          KM   BASIN 77B
1138          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1139          KM    L=        .6  Lca=       .3   S=   26.3  Kn= .050  LAG=  19.3
1140          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1141          BA     .36
1142          LG     .30     .25    5.30     .24    5.00
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1143          UI     78.    277.    421.    700.    544.    360.    189.     93.     46.     19.
1144          UI     19.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1145          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1146          KK  RET77B
1147          KM   RETAIN 100YR 2HR VOLUME
1148          DT    D77B      16
1149          DI       0   10000
1150          DQ       0   10000
              *
              * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1151          KK   CP77B
1152          KM   COMBINE S77A AND S77B
1153          HC       2
              *
              * DDM   ***** Preserved *****

1154          KK   77BTC
1155          KM   ROUTE 77B TO 77C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
1156          KM    WESTERN EDGE OF 77C
1157          RS       5    FLOW      -1
1158          RC    .045     .04    .045    4750   .0042
1159          RX       0     500     950    1003    1007    1061    1511    2011
1160          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****

1161          KK     77C
1162          KM   BASIN 77C
1163          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1164          KM    L=        .5  Lca=        .3   S=   32.3  Kn= .020  LAG=   7.2
1165          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1166          BA     .28
1167          LG     .10     .25    5.80     .27   79.00
1168          UI    492.   1219.    393.     60.      0.      0.      0.      0.      0.      0.
1169          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1170          KK  RET77C
1171          KM   RETAIN 100YR 2HR VOLUME
1172          DT    D77C      28
1173          DI       0   10000
1174          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1175          KK    C77C
1176          KM   COMBINE FLOWS FROM C77B AND SUBBASIN 77C
1177          HC       2
              *
              * DDM   ***** Preserved *****

1178          KK  77CT78
1179          RS       3    FLOW      -1
1180          RC   0.035   0.022   0.035    2400   0.002
1181          RX       0     100     110     115     120     125     130     135
1182          RY       4       3     2.5       0       0     2.5       8       9
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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```

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

1183          KK     78A
1184          KM   BASIN 78A
1185          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1186          KM    L=       3.3  Lca=       1.3   S=   30.2  Kn= .090  LAG= 118.0
1187          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1188          BA    1.88
1189          LG     .35     .36    5.00     .27     .00
1190          UI     54.     54.     54.     54.     54.    124.    176.    203.    227.    252.
1191          UI    268.    290.    305.    322.    342.    366.    396.    417.    451.    515.
1192          UI    612.    641.    716.    643.    579.    531.    494.    464.    437.    417.
1193          UI    385.    356.    334.    315.    290.    270.    255.    233.    206.    159.
1194          UI    153.     95.     95.     95.     88.     88.     88.     65.     54.     54.
1195          UI     54.     54.     45.     16.     16.     16.     16.     16.     16.     16.
1196          UI     16.     16.     16.     16.     16.     16.     16.     16.     16.     16.
1197          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1198          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET78A
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION BECAUSE THERE IS QUESTIONS ABOUT
              * KM RETENTION ENFORCEMENT IN PINAL COUNTY
              * DT  D78A       0
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****

1199          KK   78ATB
1200          KM   ROUTE 78A TO 78B VIA WASH CROSSING COUNTY LINE
1201          RS       4    FLOW      -1
1202          RC    .045     .04    .045    3500   .0042
1203          RX       0     500     980    1003    1007    1031    1511    2011
1204          RY     4.5     3.5       3       0       0       3     3.5     4.5
              *
              * DDM   ***** Updated *****

1205          KK     78B
1206          KM   BASIN 78B
1207          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1208          KM    L=        .6  Lca=        .4   S=   31.6  Kn= .050  LAG=  20.9
1209          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1210          BA     .39
1211          LG     .30     .15    8.40     .07    5.00
1212          UI     68.    262.    393.    635.    638.    433.    283.    126.     78.     34.
1213          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
1214          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET78B
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION BECAUSE THE AREA HAS 100% EXISTING
              * KM DEVELOPMENT WITH UNSURE RETENTION
              * DT  D78B       0
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****
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                                        HEC-1 INPUT

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

1215          KK    C78B
1216          KM   COMBINE FLOWS FROM SUBBASIN 78A AND 78B
1217          HC       2
              *
              * DDM   ***** Preserved *****

1218          KK   78BTC
1219          KM   ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
```

```
1220          KM    WESTERN EDGE OF 78C.
1221          RS       3    FLOW      -1
1222          RC    .035    .022    .035    4500    .0033
1223          RX       0     100     110     115     120     125     130     135
1224          RY       5       4     3.5       0       0     3.5       8       9
              *
              * DDM   ***** Updated *****

1225          KK     78C
1226          KM   BASIN 78C
1227          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1228          KM    L=        .5  Lca=        .3   S=   31.7  Kn= .026  LAG=   9.0
1229          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1230          BA     .28
1231          LG     .13     .10   11.20     .03   64.00
1232          UI    319.    980.    652.    164.     34.      0.      0.      0.      0.      0.
1233          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1234          KK  RET78C
1235          KM   RETAIN 100YR 2HR VOLUME
1236          DT    D78C      24
1237          DI       0   10000
1238          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1239          KK    C78C
1240          KM   COMBINE FLOWS FROM 78B AND 78C
1241          HC       2
              *
              * DDM   ***** Preserved *****

1242          KK   C78C2
1243          KM   COMBINE FLOWS FROM 77C AND 78C
1244          HC       2
              *
              * DDM   ***** Preserved *****

1245          KK  78CT79
1246          KM   ROUTE 78C TO 79B AT ELLSWORTH VIA GM CHANNEL
1247          RS       4    FLOW      -1
1248          RC    .035    .022    .035   10560    .0044
1249          RX       0     500     800     805     820     825    1125    1625
1250          RY       7       6       5       0       0       5       6       7
              *
              * DDM   ***** Updated *****
```



```
                                          HEC-1 INPUT

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


1251          KK     79A
1252          KM   BASIN 79A
1253          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1254          KM    L=       2.3  Lca=       1.2   S=   23.2  Kn= .090  LAG= 106.0
1255          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1256          BA    2.01
1257          LG     .35     .30    8.00     .08     .00
1258          UI     64.     64.     64.     64.     82.    209.    232.    262.    299.    321.
1259          UI    347.    367.    390.    421.    458.    489.    527.    610.    726.    792.
1260          UI    825.    727.    655.    600.    557.    523.    495.    451.    417.    390.
1261          UI    361.    328.    308.    285.    244.    190.    169.    113.    113.    109.
1262          UI    105.    105.     85.     64.     64.     64.     64.     37.     20.     20.
1263          UI     20.     20.     20.     20.     20.     20.     20.     20.     20.     20.
1264          UI     20.     20.     20.      0.      0.      0.      0.      0.      0.      0.
1265          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET79A
```

```
                 * KM RETAIN 100YR 2HR VOLUME -  NO RETENTION - ON GM PROVING GROUNDS
                 * DT  D79A     127
                 * DI     0   10000
                 * DQ     0   10000
                 *
                 * DDM   ***** Preserved *****

1266             KK   C79A1
1267             KM   COMBINE FLOWS FROM 78C AND 79A
1268             HC       2
                 *
                 * DDM   ***** Updated *****

1269             KK     78F
1270             KM   BASIN 78F
1271             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1272             KM    L=      3.7  Lca=      2.1   S=   29.8  Kn= .090  LAG= 147.0
1273             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1274             BA    4.19
1275             LG     .35     .36    5.00     .27     .00
1276             UI     96.     96.     96.     96.     96.     96.    148.    315.    325.    368.
1277             UI    399.    442.    468.    495.    521.    541.    566.    595.    626.    663.
1278             UI    706.    737.    774.    845.    936.   1085.   1119.   1276.   1239.   1127.
1279             UI   1033.    968.    907.    862.    820.    782.    751.    712.    667.    629.
1280             UI    597.    570.    541.    502.    472.    454.    436.    368.    339.    276.
1281             UI    276.    174.    170.    170.    168.    158.    158.    158.    156.     96.
1282             UI     96.     96.     96.     96.     96.     79.     29.     29.     29.     29.
1283             UI     29.     29.     29.     29.     29.     29.     29.     29.     29.     29.
1284             UI     29.     29.     29.     29.     29.     29.     29.      0.      0.      0.
1285             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * KKRET78F
                 * KM RETAIN 100YR 2HR VOLUME - NO RETENTION WITHIN PINAL COUNTY BECAUSE OF
                 * KM QUESTIONABLE RETENTION ENFORCEMENT
                 * DT  D78F       0
                 * DI     0   10000
                 * DQ     0   10000
                 *
                 * DDM   ***** Preserved *****
1                                          HEC-1 INPUT
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1286             KK   78FTD
1287             KM   ROUTE FLOWS FROM 78F TO 78D VIA WASH
1288             RS       7    FLOW      -1
1289             RC    .045     .04    .045    6250   .0041
1290             RX       0     500     950    1003    1007    1061    1511    2011
1291             RY       5     4.5       4       0       0       4     4.5       5
                 *
                 *
                 * DDM   ***** Updated *****

1292             KK     78D
1293             KM   BASIN 78D
1294             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1295             KM    L=      1.2  Lca=       .5   S=   21.7  Kn= .030  LAG=  19.5
1296             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1297             BA     .89
1298             LG     .15     .15    8.00     .11   55.00
1299             UI    189.    678.   1029.   1713.   1367.    909.    496.    240.    123.     47.
1300             UI     47.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1301             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1302             KK  RET78D
1303             KM   RETAIN 100YR 2HR VOLUME
1304             DT    D78D      84
```

```
1305        DI       0   10000
1306        DQ       0   10000
            *
            * DDM   ***** Preserved *****

1307        KK    C78D
1308        KM   COMBINE FLOWS FROM 82A WITH FLOWS FROM 78D
1309        HC       2
            *
            * DDM   ***** Updated *****

1310        KK    82A4
1311        KM   BASIN 82A4
1312        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1313        KM    L=      3.5  Lca=      1.5   S=   29.1  Kn= .090  LAG= 128.0
1314        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1315        BA    2.13
1316        LG     .35     .36    5.00     .27     .00
1317        UI     56.     56.     56.     56.     56.     70.    184.    193.    214.    248.
1318        UI    265.    281.    302.    316.    332.    352.    374.    401.    424.    447.
1319        UI    494.    557.    650.    691.    742.    667.    606.    560.    523.    490.
1320        UI    466.    443.    419.    389.    364.    343.    325.    299.    281.    267.
1321        UI    251.    214.    182.    161.    126.     99.     99.     97.     92.     92.
1322        UI     92.     69.     56.     56.     56.     56.     56.     27.     17.     17.
1323        UI     17.     17.     17.     17.     17.     17.     17.     17.     17.     17.
1324        UI     17.     17.     17.     17.     17.     17.      0.      0.      0.      0.
1325        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            * KK R82A4
            * KM RETAIN 100YR 2HR VOLUME - NO RETENTION IN PINAL COUNTY BECAUSE OF
            * KM QUESTIONABLE RETENTION ENFORCEMENT
            * DT D82A4       0
            * DI     0   10000
            * DQ     0   10000
            *
            * DDM   ***** Preserved *****
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                                        HEC-1 INPUT

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


1326        KK  82A4T3
1327        KM   ROUTE FLOWS FROM 82A (AT MERIDIAN RD AND GERMANN RD) TO 82B (AT 1/2 MILE
1328        KM    NORTH OF GERMANN RD AND MERIDIAN RD.) ALONG THE DIVERSION DIKE.
1329        RS       4    FLOW      -1
1330        RC    .035    .030    .035    2640   .0004
1331        RX       0       5      10      15      25      30     100     500
1332        RY       5       5       5       0       0       1       2       3
            * DDM   ***** Updated *****

1333        KK    82A3
1334        KM   BASIN 82A3
1335        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1336        KM    L=      3.6  Lca=      2.0   S=   28.3  Kn= .090  LAG= 145.0
1337        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1338        BA    2.02
1339        LG     .35     .36    5.00     .27     .00
1340        UI     47.     47.     47.     47.     47.     47.     82.    154.    162.    180.
1341        UI    200.    218.    230.    246.    257.    268.    280.    294.    310.    330.
1342        UI    351.    365.    387.    425.    477.    553.    566.    633.    583.    529.
1343        UI    492.    460.    434.    410.    392.    376.    361.    336.    316.    299.
1344        UI    284.    271.    250.    237.    228.    216.    190.    180.    136.    135.
1345        UI    101.     83.     83.     83.     78.     77.     77.     77.     52.     47.
1346        UI     47.     47.     47.     47.     42.     14.     14.     14.     14.     14.
1347        UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
1348        UI     14.     14.     14.     14.     14.     14.      0.      0.      0.      0.
1349        UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
            *
            * KK R82A3
            * KM RETAIN 100YR 2HR VOLUME - NO RETENTION BECAUSE THERE IS NO GUARANTEE OF
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                    * KM RETENTION ENFORCEMENT IN PINAL COUNTY
                    * DT D82A3       0
                    * DI     0   10000
                    * DQ     0   10000
                    *
                    *
                    * DDM   ***** Preserved *****

1350                KK   C82A3
1351                KM   COMBINE FLOWS FROM C82A4 AND C82A3 AT 1/2 MILE NORTH OF GERMANN RD AND
1352                KM   MERIDIAN ROAD.
1353                HC       2
                    *
                    * DDM   ***** Preserved *****

1354                KK  82A3T2
1355                KM   ROUTE FLOWS FROM 82A3 (AT 1/2 MILE NORTH OF GERMANN RD AND MERIDIAN RD)
1356                KM    ALONG DIVERSION DIKE TO PECOS RD ABOUT 1/4 MILE WEST OF MERIDIAN RD.
1357                RS       4    FLOW      -1
1358                RC    .035    .030    .035    2500    .0004
1359                RX       0       5      10      15      25      30     100     500
1360                RY       5       5       5       0       0       1       2       3
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1361                KK    CAP2
1362                KM   INFLOW FROM EAST OF THE CAP THROUGH 1 - 36" PIPE OVERCHUTE
1363                KM   STATION #536+00 SALT-GILA AQUEDUCT REACH 2
1364                KM   QI CARDS BASED ON OVERCHUTE CAPACITY OF 64 CFS
1365                IN     60
1366                BA     .01
1367                QI       0      20      64      64      64      64      64      64      64      64
1368                QI      64      64      64      64      64      64      64      64      64      64
1369                QI      64      64      64      64      64
                    *
                    * DDM   ***** Preserved *****

1370                KK   RCAP2
1371                KM   ROUTE CAP2 THROUGH 82A VIA WASH
1372                IN      15
1373                RS      27    FLOW      -1
1374                RC    .045     .04    .045   24000    .005
1375                RX       0     500    1000    1010    1020    1030    1530    2030
1376                RY       8       5       3       0       0       3       5       8
                    *
                    * DDM   ***** Updated *****

1377                KK    82A2
1378                KM   BASIN 82A2
1379                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1380                KM    L=      4.6  Lca=      2.9   S=   27.2  Kn= .089  LAG= 183.0
1381                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1382                BA    4.13
1383                LG     .35     .36    5.00     .27    1.00
1384                UI     76.     76.     76.     76.     76.     76.     76.     76.    177.    249.
1385                UI    250.    291.    291.    339.    349.    371.    381.    406.    420.    430.
1386                UI    448.    466.    483.    503.    529.    561.    578.    596.    631.    680.
1387                UI    743.    805.    911.    923.   1027.    979.    901.    845.    794.    751.
1388                UI    717.    686.    659.    635.    613.    594.    570.    540.    514.    487.
1389                UI    470.    455.    437.    407.    393.    372.    362.    349.    315.    291.
1390                UI    263.    218.    218.    179.    134.    134.    134.    134.    128.    125.
1391                UI    125.    125.    125.     96.     76.     76.     76.     76.     76.     76.
1392                UI     76.     67.     23.     23.     23.     23.     23.     23.     23.     23.
1393                UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
1394                UI     23.     23.     23.     23.     23.     23.     23.     23.     23.      0.
1395                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1396                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
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                    *
                    * KK R82A2
                    * KM RETAIN 100YR 2HR VOLUME - NO RETENTION BECAUSE THERE IS NO GUARANTE OF
                    * KM RETENTION ENFORCEMENT IN PINAL COUNTY
                    * DT D82A2       0
                    * DI     0   10000
                    * DQ     0   10000
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1397                KK   C82A2
1398                KM   COMBINE FLOWS FROM CAP OVERCHUTE AND SUBBASIN 82A (AT MERIDIAN RD AND PECOS)
1399                HC       2
                    *
                    * DDM   ***** Updated *****

1400                KK    82A1
1401                KM   BASIN 82A1
1402                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1403                KM    L=      3.6  Lca=       .9   S=   33.9  Kn= .090  LAG= 103.0
1404                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1405                BA    3.12
1406                LG     .35     .36    5.00     .27     .00
1407                UI    102.    102.    102.    102.    163.    335.    381.    436.    485.    526.
1408                UI    564.    599.    644.    693.    757.    801.    901.   1048.   1222.   1356.
1409                UI   1223.   1084.    987.    913.    852.    800.    742.    675.    629.    589.
1410                UI    529.    494.    459.    391.    304.    266.    180.    180.    173.    167.
1411                UI    167.    123.    102.    102.    102.    102.     36.     31.     31.     31.
1412                UI     31.     31.     31.     31.     31.     31.     31.     31.     31.     31.
1413                UI     31.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1414                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * KK R82A1
                    * KM RETAIN 100YR 2HR VOLUME - NO RETENTION BECAUSE THERE IS NO GUARANTEE OF
                    * KM RETENTION ENFORCEMENT IN PINAL COUNTY
                    * DT D82A1       0
                    * DI     0   10000
                    * DQ     0   10000
                    *
                    * DDM   ***** Preserved *****

1415                KK   C82A1
1416                KM   COMBINE FLOWS FROM 82A2 AND 82A1 AT MERIDIAN RD AND PECOS RD,
1417                HC       3
                    * DDM   ***** Preserved *****

1418                KK   82ATD
1419                KM   ROUTE FLOW FROM SUBBASIN 82A TO 78D VIA WASH
1420                RS       5    FLOW      -1
1421                RC    .045     .04    .045    4250   .0056
1422                RX       0     500     950    1010    1025    1085    1535    2035
1423                RY       8       5       3       0       0       3       5       8
                    *
                    * DDM   ***** Preserved *****

1424                KK   C78D2
1425                KM   COMBINE FLOW FROM 82A WITH FLOW FROM 78D
1426                HC       2
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1427                KK   78DTE
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1428          KM   ROUTE FLOWS FROM 78D TO 78E VIA WASH
1429          RS       6    FLOW      -1
1430          RC    .045     .04    .045    5280   .0041
1431          RX       0     500     950    1000    1010    1070    1511    2011
1432          RY       7       5       3       0       0       3       5       7
              *
              * DDM   ***** Updated *****

1433          KK     78E
1434          KM   BASIN 78E
1435          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1436          KM    L=       1.1  Lca=        .5   S=   17.4  Kn= .087  LAG=  57.4
1437          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1438          BA    1.01
1439          LG     .35     .26    8.80     .06    1.00
1440          UI     59.     59.    108.    212.    271.    313.    351.    402.    460.    565.
1441          UI    741.    698.    577.    502.    447.    382.    335.    289.    241.    166.
1442          UI    104.    100.     97.     60.     59.     45.     18.     18.     18.     18.
1443          UI     18.     18.     18.     18.      0.      0.      0.      0.      0.      0.
1444          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET78E
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION - ON GM PROVING GROUNDS
              * DT  D78E      63
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****

1445          KK    C78E
1446          KM   COMBINE FLOWS FROM 78D AND 78E (CRISMAN ROAD)
1447          HC       2
              *
              * DDM   ***** Preserved *****

1448          KK  78T79B
1449          KM   ROUTE FLOWS NORTH ALONG ELLSWORTH IN THE AIRFORCE PERIMETER CHANNEL
1450          RS       4    FLOW      -1
1451          RC   0.035   0.022   0.014    5280   0.002
1452          RX       0     100     120     130     160     170     220     240
1453          RY      10       7       6       0       0       6     6.5      10
              *
              * DDM   ***** Updated *****

1454          KK     79B
1455          KM   BASIN 79B
1456          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1457          KM    L=       1.4  Lca=        .6   S=    9.0  Kn= .090  LAG=  77.7
1458          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1459          BA    1.00
1460          LG     .35     .25    9.70     .05     .00
1461          UI     43.     43.     43.     85.    150.    179.    207.    232.    250.    275.
1462          UI    306.    335.    388.    479.    557.    515.    444.    396.    360.    331.
1
                                          HEC-1 INPUT
PAGE 41

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

1463          UI    295.    267.    240.    216.    192.    155.    123.     76.     76.     71.
1464          UI     71.     48.     43.     43.     36.     13.     13.     13.     13.     13.
1465          UI     13.     13.     13.     13.     13.     13.      0.      0.      0.      0.
1466          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * KKRET79B
              * KM RETAIN 100YR 2HR VOLUME - NO RETENTION - GM PROVING GROUNDS
              * DT  D79B      68
              * DI     0   10000
              * DQ     0   10000
              *
              * DDM   ***** Preserved *****
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1467          KK    C79B
1468          KM   COMBINE 79B AND ROUTED 78C
1469          HC       2
              *
              * DDM   ***** Preserved *****

1470          KK     C79
1471          KM    COMBINE FLOWS FROM 79A AND 79B AT ELLSWORTH AND WILLIAMS FIELD
1472          KM    CHANNEL EAST SIDE OF GATEWAY WILLIAMS FLOWING TO THE NORTH
1473          HC       2
              *
              * DDM   ***** Preserved *****

1474          KK   79TCP
1475          KM   ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NORTH
1476          KM   PERIMETER CHANNEL
1477          RS       6    FLOW      -1
1478          RC    .035    .030    .035    8500    .0031
1479          RX       0    1000    2000    2017    2105    2122    3122    4122
1480          RY     8.5     7.5     6.5       0       0     7.5     8.5     9.5
              *
              * DDM   ***** Preserved *****

1481          KK   CPPWR
1482          KM   COMBINE FLOWS FROM 75 AND 79 IN THE POWERLINE FLOODWAY ALONG RAY ROAD
1483          KM    AND AT HAWES ROAD.
1484          HC       2
              *
              * DDM   ***** Preserved *****

1485          KK  CPT80A
1486          KM   ROUTE CPPWR THROUGH AIR FORCE PERIMETER CHANNEL (POWERLINE FLOODWAY)
1487          RS       3    FLOW      -1
1488          RC    .055    .025    .055    9000    .0038
1489          RX       0    1005    1023    1040    1100    1117    1135    2140
1490          RY       9     8.5     8.5       0       0     8.5     8.5       9
              *
              * DDM   ***** Updated *****
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                                        HEC-1 INPUT

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


1491          KK     80A
1492          KM   BASIN 80A
1493          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1494          KM    L=      3.8  Lca=      2.2   S=   14.2  Kn= .030  LAG=  58.2
1495          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1496          BA    2.64
1497          LG     .15     .15    9.70     .06   55.00
1498          UI    153.    153.    265.    544.    690.    802.    899.   1020.   1171.   1421.
1499          UI   1851.   1871.   1534.   1330.   1185.   1024.    896.    770.    653.    479.
1500          UI    305.    265.    251.    187.    153.    153.     50.     47.     47.     47.
1501          UI     47.     47.     47.     47.      0.      0.      0.      0.      0.      0.
1502          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1503          KK  RET80A
1504          KM   RETAIN 100YR 2HR VOLUME
1505          DT    D80A      33
1506          DI       0   10000
1507          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1508          KK  CPOWER
1509          KM   COMBINE FLOWS FROM C79A AND SUBBASIN 80A
1510          HC       2
              *
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```
                    * DDM   ***** Preserved *****

1511                KK  EMFPOW
1512                KM   EMF AT POWERLINE
1513                HC       2
                    *
                    * DDM   ***** Preserved *****

1514                KK  POWTWI
1515                KM   ROUTE EMF FLOW TO WILLIAMS FIELD ROAD VIA THE EMF
1516                KM   THIS SECTION IS CONCRETE LINE TO PAST POWER ROAD BRIDGE
1517                RS       2    FLOW      -1
1518                RC     .03    .012     .03    4750   .0003
1519                RX       0     500     520     553     693     726     740     742
1520                RY      14      12      11       0       0      11      11      12
                    *
                    * DDM   ***** Updated *****

1521                KK     80B
1522                KM   BASIN 80B
1523                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1524                KM    L=       1.5  Lca=        .9   S=   18.4  Kn= .044  LAG=  41.9
1525                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1526                BA    1.12
1527                LG     .13     .17    6.80     .18   48.00
1528                UI     90.    105.    319.    433.    515.    614.    754.   1063.   1032.    814.
1529                UI    687.    563.    464.    359.    213.    155.    136.     90.     73.     28.
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1530                UI     28.     28.     28.     28.     28.      0.      0.      0.      0.      0.
1531                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

1532                KK  RET80B
1533                KM   RETAIN 100YR 2HR VOLUME
1534                DT    D80B       4
1535                DI       0   10000
1536                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

1537                KK   MFWIL
1538                KM   COMBINE FLOWS INTO THE EMF WEST OF WILLIAMS AFB FROM 80A, EMFPOWERLINE AND
1539                KM   EMFRAY
1540                HC       2
                    *
                    * DDM   ***** Preserved *****

1541                KK  WILTSP
1542                KM   ROUTE EMF FLOW FROM WILLIAMS FIELD ROAD TO THE SOUTHERN PACIFIC RAILROAD
1543                KM     (AT RITTENHOUSE ROAD)
1544                RS       3    FLOW      -1
1545                RC     .03    .022     .03    5000   .0003
1546                RX       0     500     520     553     693     726     740     742
1547                RY      14      12      11       0       0      11      11      12
                    * DDM   ***** Updated *****

1548                KK     82B
1549                KM   BASIN 82B
1550                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1551                KM    L=        .9  Lca=        .4   S=   21.2  Kn= .030  LAG=  17.2
1552                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1553                BA     .92
1554                LG     .15     .25    5.00     .36   55.00
1555                UI    266.    879.   1420.   2004.   1268.    727.    294.    142.     55.     55.
1556                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1557                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
                    *
                    * DDM   ***** Preserved *****

1558                KK    D82B
1559                KM    DIVERTING 110.7 ACRE-FEET DUE TO ON-SITE RETENTION
1560                KM   VOLUMES WERE DERIVED FROM DRAINAGE REPORT - REFERENCE 7.
1561                DT     TRW   110.7
1562                DI       0   10000
1563                DQ       0   10000
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1564                KK  82BT83
1565                KM     ROUTE 82B TO S83 VIA PECOS ROAD
1566                RS       6    FLOW      -1
1567                RC    .045    .025    .045    5260   .0032
1568                RX       0     500    1000    1002    1006    1046    1546    2046
1569                RY     4.5     4.0      .5       0       0      .5     4.5     5.5
                    * DDM   ***** Updated *****

1570                KK      83
1571                KM   BASIN 83
1572                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1573                KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
1574                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1575                BA    1.01
1576                LG     .15     .25    5.00     .36   55.00
1577                UI    131.    423.    700.    931.   1454.   1362.    993.    726.    464.    226.
1578                UI    161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
1579                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****

1580                KK   RET83
1581                KM   RETAIN 100YR 2HR VOLUME
1582                DT     D83      83
1583                DI       0   10000
1584                DQ       0   10000
                    *
                    * DDM   ***** Preserved *****

1585                KK     C83
1586                KM     COMBINE C82B AND 83
1587                HC       2
                    * DDM   ***** Preserved *****

1588                KK   83T84
1589                KM     ROUTE S83 TO S84 VIA PECOS ROAD
1590                RS       6    FLOW      -1
1591                RC     .06    .055    .065    5260   .0032
1592                RX       0     500    1000    1002    1006    1046    1546    2046
1593                RY       4     3.5      .5      .5     3.5     4.5       5     5.5
                    * DDM   ***** Updated *****

1594                KK      84
1595                KM   BASIN 84
1596                KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1597                KM    L=      2.0  Lca=       .5   S=   12.5  Kn= .030  LAG=  26.7
1598                KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1599                BA     .99
1600                LG     .15     .25    4.70     .40   55.00
1601                UI    125.    380.    651.    855.   1278.   1399.   1008.    747.    520.    258.
1602                UI    182.    120.     38.     38.     38.      0.      0.      0.      0.      0.
1603                UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    * DDM   ***** Preserved *****
```

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

1604          KK   RET84
1605          KM   RETAIN 100YR 2HR VOLUME
1606          DT     D84      85
1607          DI       0   10000
1608          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1609          KK     C84
1610          KM     COMBINE C83 AND 84
1611          HC       2
              * DDM   ***** Preserved *****

1612          KK   84T85
1613          KM    ROUTE S84 TO S85 VIA WAFB SOUTH PERIMETER CHANNEL
1614          RS       4    FLOW      -1
1615          RC    0.06   0.035    0.06    5260   .0039
1616          RX       0     500    1000    1013    1028    1041    1541    2041
1617          RY     5.5       5     4.5       0       0     4.5       5     5.5
              * DDM   ***** Updated *****

1618          KK      85
1619          KM   BASIN 85
1620          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1621          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
1622          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1623          BA    1.00
1624          LG     .15     .25    4.35     .51   55.00
1625          UI    131.    422.    698.    929.   1452.   1359.    991.    725.    463.    226.
1626          UI    161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
1627          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1628          KK   RET85
1629          KM   RETAIN 100YR 2HR VOLUME
1630          DT     D85      84
1631          DI       0   10000
1632          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1633          KK     C85
1634          KM    COMBINE C84 AND 85
1635          HC       2
              * DDM   ***** Preserved *****

1636          KK   85T86
1637          KM     ROUTE S85 TO S86 VIA WAFB SOUTH PERIMETER CHANNEL
1638          RS       4    FLOW      -1
1639          RC   0.055   0.035   0.055    5280   .0039
1640          RX       0     500    1000    1013    1028    1041    1541    2041
1641          RY     5.5       5     4.5       0       0     4.5       5     5.5
              * DDM   ***** Updated *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1642          KK      86
1643          KM   BASIN 86
1644          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1645          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
1646          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
1647          BA    1.00
1648          LG     .15      .25     4.55      .45    55.00
1649          UI    131.     420.     695.     925.    1446.    1354.     987.     722.     461.     225.
1650          UI    160.      89.      40.      40.      40.       0.       0.       0.       0.       0.
1651          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              * DDM   ***** Preserved *****

1652          KK   RET86
1653          KM   RETAIN 100YR 2HR VOLUME
1654          DT     D86      85
1655          DI       0   10000
1656          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1657          KK     C86
1658          KM     COMBINE 85 AND 86
1659          HC       2
              * DDM   ***** Preserved *****

1660          KK   86T91
1661          KM     ROUTE S86 TO S91 VIA WAFB SOUTH PERIMETER CHANNEL. Grassy v=3ft/sec
1662          RS       6    FLOW      -1
1663          RC    0.05   0.035    0.05    5500    .0025
1664          RX       0     500    1000    1013     1028     1041     1541     2041
1665          RY     5.5       5     4.5       0        0      4.5        5      5.5
              *
              * DDM   ***** Updated *****

1666          KK     87A
1667          KM   BASIN 87A
1668          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1669          KM    L=       1.0  Lca=        .5   S=   24.8  Kn= .020  LAG=  11.7
1670          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1671          BA     .49
1672          LG     .10      .25     5.00      .40    80.00
1673          UI    333.     979.    1448.     720.     221.      66.       0.       0.       0.       0.
1674          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              * DDM   ***** Preserved *****

1675          KK  RET87A
1676          KM   RETAIN 100YR 2HR VOLUME
1677          DT    D87A      49
1678          DI       0   10000
1679          DQ       0   10000
              *
              *
              * DDM   ***** Preserved *****
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                                                HEC-1 INPUT

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


1680          KK   87ATB
1681          KM   ROUTE 87A TO 87B VIA SHEET FLOW
1682          RS       3    FLOW      -1
1683          RC    .040     .040     .040    2640    .0056
1684          RX       0     500    1000    1005     1006     1011     1511     2011
1685          RY       1      .5       0       0        0       .5        1      1.5
              *
              * DDM   ***** Updated *****

1686          KK     87B
1687          KM   BASIN 87B
1688          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1689          KM    L=        .9  Lca=        .5   S=   11.6  Kn= .020  LAG=  12.8
1690          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1691          BA     .49
```

```
1692          LG     .10     .25    5.00     .40   80.00
1693          UI    275.    809.   1385.    833.    327.    116.     40.      0.      0.      0.
1694          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1695          KK  RET87B
1696          KM   RETAIN 100YR 2HR VOLUME
1697          DT    D87B      49
1698          DI       0   10000
1699          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1700          KK     C87
1701          KM   COMBINE FLOW FROM SUBBASINS 87A AND 87B
1702          HC       2
              *
              * DDM   ***** Preserved *****

1703          KK  87T88B
1704          KM     ROUTE S87 TO S88 VIA GERMANN ROAD
1705          RS       6    FLOW      -1
1706          RC    .045    .025    .045    5280    .002
1707          RX       0    1000    1005    1010    1050    1060    1560    2060
1708          RY      14      13      18      12      11      14    14.5      15
              *
              * DDM   ***** Updated *****

1709          KK     88A
1710          KM   BASIN 88A
1711          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1712          KM    L=        .8  Lca=        .2   S=   13.2  Kn= .020  LAG=   9.2
1713          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1714          BA     .50
1715          LG     .10     .25    5.00     .40   80.00
1716          UI    549.   1709.   1208.    323.     71.      0.      0.      0.      0.      0.
1717          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
1                                                HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1718          KK  RET88A
1719          KM   RETAIN 100YR 2HR VOLUME
1720          DT    D88A      50
1721          DI       0   10000
1722          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1723          KK   88ATB
1724          KM   ROUTE FLOWS FROM SUBBASIN 88A TO 88B VIA SHEET FLOW
1725          RS       4    FLOW      -1
1726          RC     .04     .04     .04    2640   .0090
1727          RX       0     500    1000    1001    1002    1500    2000    2500
1728          RY       1     1.5       0       0       0      .5       1     1.5
              *
              * DDM   ***** Updated *****

1729          KK     88B
1730          KM   BASIN 88B
1731          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1732          KM    L=        .9  Lca=        .6   S=   21.2  Kn= .020  LAG=  12.8
1733          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1734          BA     .50
1735          LG     .10     .25    5.00     .40   80.00
1736          UI    279.    819.   1402.    843.    331.    117.     40.      0.      0.      0.
```

```
1737          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1738          KK  RET88B
1739          KM   RETAIN 100YR 2HR VOLUME
1740          DT    D88B      50
1741          DI       0   10000
1742          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1743          KK    C88B
1744          KM   COMBINE FLOWS FROM SUBBASINS 88A AND 88B
1745          HC       2
              *
              * DDM   ***** Preserved *****

1746          KK     C88
1747          KM    COMBINE 87 AND 88
1748          HC       2
              * DDM   ***** Preserved *****

1749          KK   88T89
1750          KM     ROUTE S88 TO S89 VIA GERMANN ROAD
1751          RS       6    FLOW      -1
1752          RC    .045    .025    .045    5280    .004
1753          RX       0    1000    1005    1010    1050    1060    1560    2060
1754          RY      14      13      18      12      11      14    14.5      15
              *
              * DDM   ***** Updated *****
1                                          HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1755          KK     89A
1756          KM   BASIN 89A
1757          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1758          KM    L=       1.0  Lca=       .6   S=   19.0  Kn= .020  LAG=  13.5
1759          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1760          BA     .50
1761          LG     .10     .25    4.65     .47   80.00
1762          UI    247.    742.   1328.    891.    408.    158.     41.     38.      0.      0.
1763          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1764          KK  RET89A
1765          KM   RETAIN 100YR 2HR VOLUME
1766          DT     89A      50
1767          DI       0   10000
1768          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1769          KK   89ATB
1770          KM   ROUTE FLOWS FROM SUBBASIN 89A TO 89B VIA SHEET FLOW
1771          RS       4    FLOW      -1
1772          RC    .040    .040    .040    2640   .0037
1773          RX       0     500    1000    1001    1002    1500    2000    2500
1774          RY       1      .5       0       0       0      .5       1     1.5
              *
              * DDM   ***** Updated *****

1775          KK     89B
1776          KM   BASIN 89B
1777          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1778          KM    L=       .9  Lca=       .5   S=   23.2  Kn= .020  LAG=  11.7
1779          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
1780        BA      .50
1781        LG      .10      .25     4.80      .43    80.00
1782        UI     336.     987.    1460.     726.     223.      67.       0.       0.       0.       0.
1783        UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
            *
            * DDM   ***** Preserved *****

1784        KK  RET89B
1785        KM   RETAIN 100YR 2HR VOLUME
1786        DT    D89B      49
1787        DI       0   10000
1788        DQ       0   10000
            *
            * DDM   ***** Preserved *****
```



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                                                HEC-1 INPUT

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


1789        KK    C89B
1790        KM   COMBINE FLOWS FROM SUBBASINS 89A AND 89B
1791        HC       2
            *
            * DDM   ***** Preserved *****

1792        KK     C89
1793        KM   COMBINE FLOWS FROM C89B AND C88
1794        HC       2
            *
            * DDM   ***** Preserved *****

1795        KK   89T90
1796        KM    ROUTE S89 TO S90 VIA GERMANN ROAD
1797        RS      10    FLOW      -1
1798        RC    .045    .025    .045    8818   .0045
1799        RX       0    1000    1005    1010    1050    1060    1560    2060
1800        RY      14      13      18      12      11      14    14.5      15
            *
            * DDM   ***** Updated *****

1801        KK     90A
1802        KM   BASIN 90A
1803        KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1804        KM    L=        .6  Lca=        .2   S=   24.2  Kn= .038  LAG=  12.8
1805        KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1806        BA     .48
1807        LG     .10      .25     4.60      .49    62.00
1808        UI    269.     789.    1351.     812.     319.     113.      39.       0.       0.       0.
1809        UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
            *
            * DDM   ***** Preserved *****

1810        KK  RET90A
1811        KM   RETAIN 100YR 2HR VOLUME
1812        DT    D90A      42
1813        DI       0   10000
1814        DQ       0   10000
            *
            * DDM   ***** Preserved *****

1815        KK   90ATB
1816        KM   ROUTE FLOWS FROM SUBBASIN 90A TO 90B VIA SHEET FLOW
1817        RS       7    FLOW      -1
1818        RC    .055     .04    .055    4000   .0037
1819        RX       0     500    1000    1001    1002    1500    2000    2500
1820        RY       1      .5       0       0       0      .5       1     1.5
            *
            * DDM   ***** Updated *****
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                                                HEC-1 INPUT
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1821          KK     90B
1822          KM   BASIN 90B
1823          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1824          KM    L=      2.0  Lca=      1.2   S=   15.3  Kn= .042  LAG=  49.8
1825          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1826          BA     .82
1827          LG     .22     .25    4.65     .38   31.00
1828          UI     56.     56.    147.    232.    283.    327.    379.    444.    588.    709.
1829          UI    583.    490.    427.    359.    306.    259.    187.    117.     96.     91.
1830          UI     56.     56.     28.     17.     17.     17.     17.     17.     17.      0.
1831          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1832          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

1833          KK  RET90B
1834          KM   RETAIN 100YR 2HR VOLUME
1835          DT    D90B      23
1836          DI       0   10000
1837          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1838          KK    C90B
1839          KM   COMBINE FLOWS FROM 90A AND 90B
1840          HC       2
              *
              * DDM   ***** Preserved *****

1841          KK     C90
1842          KM    COMBINE C89 AND C90B
1843          HC       2
              *
              * DDM   ***** Preserved *****

1844          KK   90T91
1845          KM    ROUTE S90 TO S91 VIA SPRR
1846          RS       7    FLOW      -1
1847          RC    .045    .022    .045    6178    .004
1848          RX       0     500    1000    1015    1065    1076    1576    2076
1849          RY       5     4.5       4       0       0       5     5.5       6
              * DDM   ***** Updated *****

1850          KK      91
1851          KM   BASIN 91
1852          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1853          KM    L=      1.4  Lca=       .6   S=   18.4  Kn= .030  LAG=  22.7
1854          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1855          BA     .46
1856          LG     .15     .25    4.65     .42   55.00
1857          UI     68.    262.    399.    586.    792.    554.    390.    234.    116.     73.
1858          UI     28.     21.     21.      0.      0.      0.      0.      0.      0.      0.
1859          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1860          KK   RET91
1861          KM   RETAIN 100YR 2HR VOLUME
1862          DT     D91      38
1863          DI       0   10000
1864          DQ       0   10000
              *
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                 * DDM   ***** Preserved *****

1865             KK    CP91
1866             KM     COMBINE 91, 90,AND 86 AT EMF NEAR THE RITTENHOUSE CHANNEL
1867             HC       3
                 *
                 * DDM   ***** Preserved *****

1868             KK  91TEMF
1869             KM   ROUTE 91 TO EMF
1870             RS       4    FLOW      -1
1871             RC   0.035   0.022   0.035    4000   0.003
1872             RX       0     200     230     240     270     280     310     410
1873             RY       9       7       6       0       0       6       7       9
                 *
                 *
                 * DDM   ***** Updated *****

1874             KK     81A
1875             KM   BASIN 81A
1876             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1877             KM    L=      3.3  Lca=      1.9   S=   16.4  Kn= .029  LAG=  49.0
1878             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1879             BA    1.81
1880             LG     .14     .25    4.70     .41   58.00
1881             UI    125.    125.    341.    523.    642.    737.    863.   1019.   1359.   1576.
1882             UI   1258.   1066.    922.    777.    656.    545.    386.    222.    209.    177.
1883             UI    125.    117.     38.     38.     38.     38.     38.     38.     38.      0.
1884             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1885             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1886             KK  RET81A
1887             KM   RETAIN 100YR 2HR VOLUME
1888             DT    D81A       5
1889             DI       0   10000
1890             DQ       0   10000
                 *
                 * DDM   ***** Preserved *****

1891             KK   81ATB
1892             KM   ROUTE SUBASIN 81A TO 81B VIA ROAD NETWORK FOR ON-BASE HOUSEING
1893             RS       9    FLOW      -1
1894             RC    .013    .013    .013    8000   .0035
1895             RX       0     500     750     753    1053    1056    1303    1803
1896             RY       3     1.5       1      .6      .6       1     1.5       3
                 *
                 * DDM   ***** Updated *****
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                                          HEC-1 INPUT

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


1897             KK     81B
1898             KM   BASIN 81B
1899             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1900             KM    L=      1.1  Lca=       .4   S=    6.9  Kn= .033  LAG=  24.7
1901             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1902             BA     .84
1903             LG     .10     .25    4.70     .45   67.00
1904             UI    115.    393.    631.    857.   1343.   1088.    796.    566.    296.    185.
1905             UI    115.     39.     35.     35.      0.      0.      0.      0.      0.      0.
1906             UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                 *
                 * DDM   ***** Preserved *****

1907             KK  RET81B
1908             KM   RETAIN 100YR 2HR VOLUME
1909             DT    D81B      35
```

```
1910          DI       0   10000
1911          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1912          KK  RITTEN
1913          KM   COMBINE FLOWS AT RITTENHOUSE ROAD BEFORE ENTERING INTO THE EMF.
1914          HC       3
              *
              * DDM   ***** Preserved *****

1915          KK  EMFRIT
1916          KM   COMBINE 81A AND 81B AND RITTENHOUSE
1917          HC       2
1918          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    77       SOSS
                V
                V
    82      RSOSS
                .
                .
    88          .          59A
                .            .
                .            .
   100          .            .------->    D59A
    98          .      RET59A
                .            .
                .            .
   103       C59A............
                V
                V
   106      59A59B
                .
                .
   113          .          59B
                .            .
                .            .
   127          .            .------->    D59B
   125          .      RET59B
                .            .
                .            .
   130       C59B............
                V
                V
   133      59BT60
                .
                .
   140          .           60
                .            .
                .            .
   157          .            .------->     D60
   155          .       RET60
                .            .
                .            .
   160      EMFGUA............
                V
                V
   163      GUATEL
                .
                .
   169          .           64
                .            .
                .            .
   182          .            .------->     D64
```

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180          .        RET64
             .           .
             .           .
185     EMFELL............
             V
             V
188     ELTWAR
             .
             .
194          .         61A
             .           .
             .           .
206          .           .-------->    D61A
204          .      RET61A
             .           V
             .           V
209          .       61ATB
             .           .
             .           .
215          .           .         61B
             .           .           .
             .           .           .
228          .           .           .-------->    D61B
226          .           .      RET61B
             .           .           .
             .           .           .
231          .       CP61B............
             .           V
             .           V
234          .      61T62E
             .           .
             .           .
240          .           .         62E
             .           .           .
             .           .           .
252          .           .           .-------->    D62E
250          .           .      RET62E
             .           .           .
             .           .           .
255          .        C62E............
             .           V
             .           V
258          .       62ETF
             .           .
             .           .
264          .           .         62A
             .           .           .
             .           .           .
275          .           .           .-------->    D62A
273          .           .      RET62A
             .           .           V
             .           .           V
278          .           .       62ATD
             .           .           .
             .           .           .
284          .           .           .         62B
             .           .           .           .
             .           .           .           .
295          .           .           .           .-------->    D62B
293          .           .           .      RET62B
             .           .           .           V
             .           .           .           V
298          .           .           .       62BTD
             .           .           .           .
             .           .           .           .
304          .           .           .           .         62D
             .           .           .           .           .
             .           .           .           .           .
317          .           .           .           .           .-------->    D62D
315          .           .           .           .       ET62D
             .           .           .           .           .
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320                 CP62D.......................
                        V
                        V
323                 62DTF
                        .
                        .
329                     .          62C
                        .            .
                        .            .
341                     .            .-------->    D62C
339                     .      RET62C
                        .           V
                        .           V
344                     .       62CTF
                        .            .
                        .            .
350                     .            .          62F
                        .            .            .
                        .            .            .
362                     .            .            .-------->    D62F
360                     .            .      RET62F
                        .            .            .
                        .            .            .
365             CP62.....................................
                    V
                    V
368             62T63
                    .
                    .
375                     .       63
                        .        .
                        .        .
387                     .        .-------->     D63
385                     .    RET63
                        .        .
                        .        .
390             CP63............
                    V
                    V
393             63T71
                    .
                    .
400                     .   ADOT-E
                        .        V
                        .        V
405                     .   AET67A
                        .        .
                        .        .
412                     .        .          67A
                        .        .            .
                        .        .            .
424                     .        .            .-------->    D67A
422                     .        .      RET67A
                        .        .            .
                        .        .            .
427                     .     C67A............
                        .        V
                        .        V
430                     .    67ATC
                        .        .
                        .        .
436                     .        .        SUP2
                        .        .           V
                        .        .           V
440                     .        .       RSUP2
                        .        .            .
                        .        .            .
447                     .        .            .          67B
                        .        .            .            .
                        .        .            .            .
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```
459                                                  .------->   D67B
457                                          RET67B
                                                     .
                                                     .
462                                   C67B............
                                         V
                                         V
465                                   67BTC
                                         .
                                         .
472                                            67C
                                                     .
                                                     .
485                                                  .------->   D67C
483                                          RET67C
                                                     .
                                                     .
488                           C67C......................
                                 V
                                 V
491                           67CTE
                                 .
                                 .
497                                   67D
                                         .
                                         .
509                                      .------->   D67D
507                                RET67D
                                         V
                                         V
512                                   67DTE
                                         .
                                         .
518                                            67E
                                                     .
                                                     .
530                                                  .------->   D67E
528                                          RET67E
                                                     .
                                                     .
533                           CP67E......................
                                 V
                                 V
536                           67T68
                                 .
                                 .
542                                   68A
                                         .
                                         .
553                                      .------->   D68A
551                                RET68A
                                         .
                                         .
556                           C68A............
                                 V
                                 V
559                           68ATB
                                 .
                                 .
565                                   68B
                                         .
                                         .
576                                      .------->   D68B
574                                RET68B
                                         .
                                         .
579                           CP68B............
                                 V
                                 V
582                           68BT69
                                 .
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588                                  69
                                      .
                                      .
599                                   .-------->     D69
597                              RET69
                                      .
                                      .
602                           C69............
                                 V
                                 V
605                          69T71
                                 .
                                 .
611                                  71
                                      .
                                      .
623                                   .-------->     D71
621                              RET71
                                      .
                                      .
626                   CP71........................
                         V
                         V
629                  71T72
                         .
                         .
636          EMFWAR............
                 V
                 V
639          WARTKN
                 .
                 .
645                  CAP1A
                         V
                         V
654                 RCAP1A
                         .
                         .
660                          CAP1B
                                 V
                                 V
669                         RCAP1B
                                 .
                                 .
675                                  65AW
                                      .
                                      .
687                                   .-------->   D65AW
685                              RE65AW
                                      .
                                      .
690                  C65AW.......................
                         V
                         V
693                 65AWTB
                         .
                         .
700                           65A
                                 V
                                 V
711                          65ATB
                                 .
                                 .
717                                  65B
                                      .
                                      .
730                                   .-------->    D65B
728                              RET65B
                                      .
                                      .
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733          .        CP65B.......................
             .           V
             .           V
736          .        65T66
             .           .
             .           .
742          .           .          66A
             .           .           .
             .           .           .
754          .           .           .-------->    D66A
752          .           .      RET66A
             .           .           V
             .           .           V
757          .           .       66ATB
             .           .           .
             .           .           .
763          .           .           .          66B
             .           .           .           .
             .           .           .           .
776          .           .           .           .-------->    D66B
774          .           .           .      RET66B
             .           .           .           .
             .           .           .           .
779          .           .       CP66B............
             .           .           V
             .           .           V
782          .           .       66BTC
             .           .           .
             .           .           .
788          .           .           .          66C
             .           .           .           .
             .           .           .           .
800          .           .           .           .-------->    D66C
798          .           .           .      RET66C
             .           .           .           .
             .           .           .           .
803          .           .       CP66C............
             .           .           V
             .           .           V
806          .           .       66CTD
             .           .           .
             .           .           .
812          .           .           .          66D
             .           .           .           .
             .           .           .           .
823          .           .           .           .-------->    D66D
821          .           .           .      RET66D
             .           .           .           .
             .           .           .           .
826          .           .       C66D............
             .           .           .
             .           .           .
829          .        CP66............
             .           V
             .           V
832          .       66DT70
             .           .
             .           .
839          .           .         70A
             .           .           .
             .           .           .
850          .           .           .-------->    D70A
848          .           .      RET70A
             .           .           .
             .           .           .
853          .        C70A............
             .           V
             .           V
856          .       70ATB
             .           .
             .           .
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862          .            .          70B
             .            .            .
             .            .            .
874          .            .            .-------->    D70B
872          .            .      RET70B
             .            .            .
             .            .            .
877          .       CP70B............
             .           V
             .           V
880          .      70BT76
             .            .
             .            .
886          .            .          76B
             .            .            .
             .            .            .
898          .            .            .-------->    D76B
896          .            .      RET76B
             .            .            .
             .            .            .
901          .       CP76B............
             .            .
             .            .
904          .            .           72
             .            .            .
             .            .            .
916          .            .            .-------->     D72
914          .            .       RET72
             .            .            .
             .            .            .
919          .        KNOX............
             .            .
             .            .
922     EMFKNX............
             V
             V
925     KNXTRY
             .
             .
931          .         76A
             .            .
             .            .
944          .            .-------->    D76A
942          .      RET76A
             .            .
             .            .
947     EMFRAY............
             .
             .
951          .         73A
             .           V
             .           V
965          .       73ATB
             .            .
             .            .
971          .            .          73B
             .            .            .
             .            .            .
983          .            .            .-------->    D73B
981          .            .      RET73B
             .            .            .
             .            .            .
986          .       CP73B............
             .           V
             .           V
989          .       73BTC
             .            .
             .            .
996          .            .          73C
             .            .            .
             .            .            .
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1007          .           .           .-------->    D73C
1005          .           .      RET73C
              .           .           .
              .           .           .
1010          .      CP73C............
              .           V
              .           V
1013          .      73T74C
              .           .
              .           .
1019          .           .        74A
              .           .         V
              .           .         V
1033          .           .      74ATB
              .           .           .
              .           .           .
1039          .           .           .         74B
              .           .           .           .
              .           .           .           .
1051          .           .           .           .-------->    D74B
1049          .           .           .     RET74B
              .           .           .           .
              .           .           .           .
1054          .           .      CP74B............
              .           .         V
              .           .         V
1057          .           .      74BTC
              .           .           .
              .           .           .
1063          .           .           .         74C
              .           .           .           .
              .           .           .           .
1074          .           .           .           .-------->    D74C
1072          .           .           .     RET74C
              .           .           .           .
              .           .           .           .
1077          .      CP74C........................
              .           V
              .           V
1080          .      74CT75
              .           .
              .           .
1086          .           .        75
              .           .           .
              .           .           .
1105          .       CP75............
              .           V
              .           V
1108          .      75TCP
              .           .
              .           .
1114          .           .        77A
              .           .         V
              .           .         V
1130          .           .      77ATB
              .           .           .
              .           .           .
1136          .           .           .         77B
              .           .           .           .
              .           .           .           .
1148          .           .           .           .-------->    D77B
1146          .           .           .     RET77B
              .           .           .           .
              .           .           .           .
1151          .           .      CP77B............
              .           .         V
              .           .         V
1154          .           .      77BTC
              .           .           .
              .           .           .
1161          .           .           .         77C
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                .         .         .         .
                .         .         .         .
1172            .         .         .         .-------->    D77C
1170            .         .         .      RET77C
                .         .         .         .
                .         .         .         .
1175            .         .      C77C.........
                .         .         V
                .         .         V
1178            .         .     77CT78
                .         .         .
                .         .         .
1183            .         .         .      78A
                .         .         .       V
                .         .         .       V
1199            .         .         .     78ATB
                .         .         .         .
                .         .         .         .
1205            .         .         .         .         78B
                .         .         .         .           .
                .         .         .         .           .
1215            .         .         .     C78B.........
                .         .         .       V
                .         .         .       V
1218            .         .         .     78BTC
                .         .         .         .
                .         .         .         .
1225            .         .         .         .         78C
                .         .         .         .           .
                .         .         .         .           .
1236            .         .         .         .           .-------->    D78C
1234            .         .         .         .      RET78C
                .         .         .         .           .
                .         .         .         .           .
1239            .         .         .     C78C.........
                .         .         .         .
                .         .         .         .
1242            .         .      C78C2........
                .         .         V
                .         .         V
1245            .         .     78CT79
                .         .         .
                .         .         .
1251            .         .         .      79A
                .         .         .         .
                .         .         .         .
1266            .         .      C79A1........
                .         .         .
                .         .         .
1269            .         .         .      78F
                .         .         .       V
                .         .         .       V
1286            .         .         .     78FTD
                .         .         .         .
                .         .         .         .
1292            .         .         .         .         78D
                .         .         .         .           .
                .         .         .         .           .
1304            .         .         .         .           .-------->    D78D
1302            .         .         .         .      RET78D
                .         .         .         .           .
                .         .         .         .           .
1307            .         .         .     C78D.........
                .         .         .         .
                .         .         .         .
1310            .         .         .         .        82A4
                .         .         .         .           V
                .         .         .         .           V
1326            .         .         .         .      82A4T3
                .         .         .         .           .
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1333                                                    82A3
                                                         .
                                                         .
1350                                        C82A3............
                                                V
                                                V
1354                                        82A3T2
                                                .
                                                .
1361                                                    CAP2
                                                          V
                                                          V
1370                                                   RCAP2
                                                         .
                                                         .
1377                                                         82A2
                                                             .
                                                             .
1397                                                   C82A2............
                                                         .
                                                         .
1400                                                         82A1
                                                             .
                                                             .
1415                                        C82A1......................
                                                V
                                                V
1418                                        82ATD
                                                .
                                                .
1424                                C78D2............
                                        V
                                        V
1427                                78DTE
                                        .
                                        .
1433                                            78E
                                                .
                                                .
1445                                 C78E............
                                        V
                                        V
1448                                78T79B
                                        .
                                        .
1454                                            79B
                                                .
                                                .
1467                                 C79B............
                                        .
                                        .
1470                        C79............
                              V
                              V
1474                       79TCP
                              .
                              .
1481                 CPPWR............
                        V
                        V
1485                 CPT80A
                        .
                        .
1491                        80A
                              .
                              .
1505                          .-------->    D80A
1503                       RET80A
                              .
                              .
1508                 CPOWER............
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                .           .
                .           .
1511      EMFPOW............
                V
                V
1514      POWTWI
                .
                .
1521            .        80B
                .           .
                .           .
1534            .           .-------->    D80B
1532            .     RET80B
                .           .
                .           .
1537       MFWIL............
                V
                V
1541      WILTSP
                .
                .
1548            .        82B
                .           .
                .           .
1561            .           .-------->     TRW
1558            .       D82B
                .          V
                .          V
1564            .     82BT83
                .           .
                .           .
1570            .           .          83
                .           .           .
                .           .           .
1582            .           .           .-------->     D83
1580            .           .      RET83
                .           .           .
                .           .           .
1585            .        C83............
                .          V
                .          V
1588            .      83T84
                .           .
                .           .
1594            .           .          84
                .           .           .
                .           .           .
1606            .           .           .-------->     D84
1604            .           .      RET84
                .           .           .
                .           .           .
1609            .        C84............
                .          V
                .          V
1612            .      84T85
                .           .
                .           .
1618            .           .          85
                .           .           .
                .           .           .
1630            .           .           .-------->     D85
1628            .           .      RET85
                .           .           .
                .           .           .
1633            .        C85............
                .          V
                .          V
1636            .      85T86
                .           .
                .           .
1642            .           .          86
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                .           .           .
                .           .           .
1654            .           .           .-------->     D86
1652            .           .      RET86
                .           .           .
                .           .           .
1657            .       C86............
                .         V
                .         V
1660            .      86T91
                .           .
                .           .
1666            .           .       87A
                .           .           .
                .           .           .
1677            .           .           .-------->    D87A
1675            .           .     RET87A
                .           .          V
                .           .          V
1680            .           .     87ATB
                .           .           .
                .           .           .
1686            .           .           .         87B
                .           .           .           .
                .           .           .           .
1697            .           .           .           .-------->    D87B
1695            .           .           .     RET87B
                .           .           .           .
                .           .           .           .
1700            .           .       C87............
                .           .          V
                .           .          V
1703            .           .     87T88B
                .           .           .
                .           .           .
1709            .           .           .         88A
                .           .           .           .
                .           .           .           .
1720            .           .           .           .-------->    D88A
1718            .           .           .     RET88A
                .           .           .          V
                .           .           .          V
1723            .           .           .      88ATB
                .           .           .           .
                .           .           .           .
1729            .           .           .           .         88B
                .           .           .           .           .
                .           .           .           .           .
1740            .           .           .           .           .-------->    D88B
1738            .           .           .           .     RET88B
                .           .           .           .           .
                .           .           .           .           .
1743            .           .           .        C88B............
                .           .           .           .
                .           .           .           .
1746            .           .       C88............
                .           .          V
                .           .          V
1749            .           .     88T89
                .           .           .
                .           .           .
1755            .           .           .         89A
                .           .           .           .
                .           .           .           .
1766            .           .           .           .-------->     89A
1764            .           .           .     RET89A
                .           .           .          V
                .           .           .          V
1769            .           .           .      89ATB
                .           .           .           .
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1775                                                  89B
                                                       .
                                                       .
1786                                                   .-------->    D89B
1784                                            RET89B
                                                       .
                                                       .
1789                                     C89B............
                                            .
                                            .
1792                              C89............
                                     V
                                     V
1795                           89T90
                                     .
                                     .
1801                                    90A
                                            .
                                            .
1812                                        .-------->    D90A
1810                                 RET90A
                                            V
                                            V
1815                                  90ATB
                                            .
                                            .
1821                                        .         90B
                                            .          .
                                            .          .
1835                                        .          .-------->    D90B
1833                                        .     RET90B
                                            .          .
                                            .          .
1838                                     C90B............
                                            .
                                            .
1841                              C90............
                                     V
                                     V
1844                           90T91
                                     .
                                     .
1850                                    91
                                            .
                                            .
1862                                        .-------->     D91
1860                                 RET91
                                            .
                                            .
1865                        CP91........................
                               V
                               V
1868                     91TEMF
                               .
                               .
1874                              81A
                                     .
                                     .
1888                                 .-------->    D81A
1886                           RET81A
                                     V
                                     V
1891                           81ATB
                                     .
                                     .
1897                                    81B
                                            .
                                            .
1909                                        .-------->    D81B
1907                                 RET81B
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                .          .          .          .
 1912           .      RITTEN.......................
                .          .
                .          .
 1915      EMFRIT............

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                    ****************************************
*                                      *                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              JUL   1997              *                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.1                *                    *          609 SECOND STREET           *
*                                      *                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE   25JUN98  TIME  13:49:19  *                    *           (916) 756-1104             *
*                                      *                    *                                      *
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SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
MARCH 1998
SOUTHEAST MESA HIGH RESOLUTION MODEL

FILENAME: FUTS.DAT

THIS MODEL REPRESENTS THE FUTURE LAND USE CONDITIONS OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 85.5 SQ. MI.
THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW CONDITIONS.

100-YEAR 24-HOUR FREQUENCY

THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY AND EAST OF THE CAP

METHODOLOGY
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS DATED 1994
THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS

STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL

LAND USES ARE UPDATED FROM MAG 97 LAND USES

RETENTION VOLUMES ARE BASED FROM A 100 YR 2 HR. VOLUMES WERE ONLY ASSUMED FOR AREAS THAT WILL HAVE FUTURE DEVELOPMENT. MANY OF THE CURRENT DEVELOPMENTS DO NOT HAVE RETENTION, OR IT IS NOT EFFECTIVE. IF THERE IS SIGNIFICANT CURRENT RETENTION IT IS ACCOUNTED FOR. FUTURE VOLUMES ARE ASSUMED TO ONLY BE 80% EFFECTIVE. THIS TAKES INTO ACCOUNT SMALL AREAS SUCH AS STREETS THAT DO NOT FLOW INTO THE RETENTION BASINS.

RETENTION IN PINAL COUNTY FOR FUTURE DEVELOPMENT IS NOT CONSIDERED BECAUSE THERE IS NO GUARANTEE OF RETENTION REQUIREMENT ENFORCEMENT.

NOTE: MUST USE FUTN.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS

THE SUPERSTITION.

LAST UPDATED ON 6/03/98

DDM MCUHP2 SOUTH EAST MESA ADMP - SOUTH OF SUPERSTITION FREEWAY, FUTURE CONDI

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

   IT          HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE     1APR97  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     4APR97  ENDING DATE
                    NDTIME       1115  ENDING TIME
                     ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .08 HOURS
                     TOTAL TIME BASE   83.25 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

60 JD          INDEX STORM NO. 1
                      STRM      3.60  PRECIPITATION DEPTH
                      TRDA       .01  TRANSPOSITION DRAINAGE AREA

61 PI            PRECIPITATION PATTERN
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71 JD          INDEX STORM NO. 2
                      STRM      3.58  PRECIPITATION DEPTH
                      TRDA      1.00  TRANSPOSITION DRAINAGE AREA
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0 PI PRECIPITATION PATTERN

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72 JD INDEX STORM NO. 3

STRM 3.49 PRECIPITATION DEPTH
TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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73 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH
TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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74 JD INDEX STORM NO. 5
STRM 3.24 PRECIPITATION DEPTH
TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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75 JD INDEX STORM NO. 6
STRM 3.10 PRECIPITATION DEPTH
TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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  76 JD          INDEX STORM NO. 7
                       STRM        3.05  PRECIPITATION DEPTH
                       TRDA       90.00  TRANSPOSITION DRAINAGE AREA

   0 PI            PRECIPITATION PATTERN
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   -----DSS---ZOPEN:  Existing File Opened,  File: FUTN.DSS
                      Unit:  71;  DSS Version: 6-EA
        ----- Entering ZRRTSX for unit 71 -----
 Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
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        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97        JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   14:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97        JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
```

```
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    8:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97        JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97        JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97        JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
```

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        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97        JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97        JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
```

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        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97        JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97        JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97        JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97        JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
```

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      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:    744
        Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35519
        JULS: 31MAR97       JULSD: 31MAR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    2   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35520
        JULS: 31MAR97       JULSD: 01APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    7:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  290   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35521
        JULS: 31MAR97       JULSD: 02APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  578   NVALS:  744    JULS:   35519  ISTIME:  1440
        NLDATA:  288   JULSD:   35522
        JULS: 31MAR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  167  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  0
        Offset:       0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:     5  Number of data values:      1
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 3, 1997  1355  (  35522  835)
        Input time offset:      0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:    1    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97       JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:    1  ILIM:    1
```

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      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
        Offset:        0,  Units: CFS      ,  Type:INST-VAL
        ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
        Time Window set.  Interval:      5  Number of data values:     744
        Starting date and time:  Apr 3, 1997  1355  (  35522  835)
        Ending   date and time:  Apr 6, 1997  0350  (  35525  230)
        Input time offset:       0
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:    1   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35522
        JULS: 03APR97        JULSD: 03APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:  167  NDATA:  288  NREAD:  122  ILIM:  122
        After ZRDINF, Record found: T
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
        Number of actual data:  288  Header length:   0
        Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.    4:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  123   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35523
        JULS: 03APR97        JULSD: 04APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  410
        After ZRDINF, Record found: F
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  411   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35524
        JULS: 03APR97        JULSD: 05APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  698
-----DSS*** ZRRTS:  CAUTION - Data block not found in file.  Unit:  71
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/05APR1997/5MIN/100YR/
        After ZRDINF, Record found: F
        Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/06APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
        NSTART:  699   NVALS:  744    JULS:   35522  ISTIME:   835
        NLDATA:  288   JULSD:   35525
        JULS: 03APR97        JULSD: 06APR97
        Quality Read: F,  Quality Requested: F
        ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   46  ILIM:  744
      ----- Exiting ZRRTS, Number of data values:    744,  Status:  3
        Offset:        0,  Units: CFS      ,  Type:INST-VAL

WARNING --- ROUTED OUTFLOW (   1587.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1736.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1803.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1806.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1762.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1679.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1723.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1791.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1794.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (   1750.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (   1668.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1668.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1734.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1738.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1696.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1617.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1600.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1665.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1670.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1631.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1583.) IS GREATER THAN MAXIMUM OUTFLOW (   1580.) IN STORAGE-OUTFLOW TABLE
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SOSS	1800.	12.83	688.	220.	88.	12.50		
+	ROUTED TO	RSOSS	1794.	13.17	687.	219.	88.	12.50		
+	HYDROGRAPH AT	59A	302.	12.33	41.	13.	4.	.26		
+	DIVERSION TO	D59A	4.	8.42	3.	1.	0.	.26		
+	HYDROGRAPH AT	RET59A	302.	12.33	41.	12.	4.	.26		
+	2 COMBINED AT	C59A	1821.	13.08	721.	230.	91.	12.76		
+	ROUTED TO	59A59B	1813.	13.25	719.	230.	91.	12.76		
+	HYDROGRAPH AT	59B	637.	12.83	132.	39.	13.	.94		
+	DIVERSION TO	D59B	637.	12.83	119.	32.	11.	.94		
+	HYDROGRAPH AT	RET59B	137.	13.67	24.	8.	3.	.94		
+	2 COMBINED AT	C59B	1813.	13.25	728.	234.	93.	13.70		
+	ROUTED TO	59BT60	1809.	13.33	727.	234.	92.	13.70		
+	HYDROGRAPH AT	60	1069.	13.50	359.	112.	37.	2.30		

+	DIVERSION TO	D60	1069.	13.50	313.	86.	29.	2.30
+	HYDROGRAPH AT	RET60	355.	14.67	86.	27.	9.	2.30
+	2 COMBINED AT	EMFGUA	1809.	13.33	772.	253.	99.	16.00
+	ROUTED TO	GUATEL	1688.	13.67	746.	252.	98.	16.00
+	HYDROGRAPH AT	64	924.	12.42	156.	51.	17.	.81
+	DIVERSION TO	D64	924.	12.42	121.	34.	11.	.81
+	HYDROGRAPH AT	RET64	477.	12.75	57.	18.	6.	.81
+	2 COMBINED AT	EMFELL	1749.	13.67	785.	265.	103.	16.81
+	ROUTED TO	ELTWAR	1600.	14.08	759.	264.	102.	16.81
+	HYDROGRAPH AT	61A	794.	12.17	95.	31.	10.	.52
+	DIVERSION TO	D61A	794.	12.17	76.	21.	7.	.52
+	HYDROGRAPH AT	RET61A	333.	12.42	33.	10.	3.	.52
+	ROUTED TO	61ATB	104.	13.25	31.	10.	3.	.52
+	HYDROGRAPH AT	61B	1175.	12.42	176.	55.	18.	1.09
+	DIVERSION TO	D61B	1175.	12.42	151.	41.	14.	1.09
+	HYDROGRAPH AT	RET61B	339.	12.83	45.	14.	5.	1.09
+	2 COMBINED AT	CP61B	330.	12.92	73.	23.	8.	1.61
+	ROUTED TO	61T62E	274.	13.17	71.	23.	8.	1.61
+	HYDROGRAPH AT	62E	229.	12.17	27.	9.	3.	.15
+	DIVERSION TO	D62E	229.	12.17	22.	6.	2.	.15
+	HYDROGRAPH AT	RET62E	75.	12.50	9.	3.	1.	.15
+	2 COMBINED AT	C62E	281.	13.17	77.	26.	9.	1.76
+	ROUTED TO	62ETF	187.	14.00	76.	26.	9.	1.76
	HYDROGRAPH AT							

+	62A	806.	12.00	89.	31.	10.	.38
+ DIVERSION TO	D62A	806.	12.00	57.	17.	6.	.38
+ HYDROGRAPH AT	RET62A	554.	12.08	46.	14.	5.	.38
+ ROUTED TO	62ATD	109.	13.83	46.	14.	5.	.38
+ HYDROGRAPH AT	62B	544.	12.00	54.	19.	6.	.23
+ DIVERSION TO	D62B	454.	11.92	33.	10.	3.	.23
+ HYDROGRAPH AT	RET62B	470.	12.08	30.	9.	3.	.23
+ ROUTED TO	62BTD	178.	12.50	28.	9.	3.	.23
+ HYDROGRAPH AT	62D	609.	12.17	86.	28.	9.	.46
+ DIVERSION TO	D62D	609.	12.17	63.	18.	6.	.46
+ HYDROGRAPH AT	ET62D	275.	12.50	34.	10.	3.	.46
+ 3 COMBINED AT	CP62D	487.	12.50	107.	33.	11.	1.07
+ ROUTED TO	62DTF	288.	13.17	106.	33.	11.	1.07
+ HYDROGRAPH AT	62C	835.	12.17	98.	32.	11.	.55
+ DIVERSION TO	D62C	754.	12.08	55.	16.	5.	.55
+ HYDROGRAPH AT	RET62C	796.	12.25	56.	16.	5.	.55
+ ROUTED TO	62CTF	371.	12.75	55.	16.	5.	.55
+ HYDROGRAPH AT	62F	421.	12.17	49.	16.	5.	.26
+ DIVERSION TO	D62F	421.	12.17	32.	9.	3.	.26
+ HYDROGRAPH AT	RET62F	365.	12.25	24.	7.	2.	.26
+ 4 COMBINED AT	CP62	646.	12.75	242.	78.	26.	3.64
+ ROUTED TO	62T63	542.	13.42	238.	78.	26.	3.64
+ HYDROGRAPH AT	63	1190.	12.33	177.	58.	19.	.91
+ DIVERSION TO	D63	1190.	12.33	128.	36.	12.	.91

+	HYDROGRAPH AT	RET63	787.	12.50	74.	22.	7.	.91
+	2 COMBINED AT	CP63	633.	12.58	302.	98.	33.	4.55
+	ROUTED TO	63T71	425.	15.50	268.	98.	33.	4.55
+	HYDROGRAPH AT	ADOT-E	248.	14.50	176.	64.	22.	.01
+	ROUTED TO	AET67A	247.	14.75	176.	64.	22.	.01
+	HYDROGRAPH AT	67A	387.	12.25	52.	17.	6.	.30
+	DIVERSION TO	D67A	387.	12.25	38.	11.	4.	.30
+	HYDROGRAPH AT	RET67A	229.	12.50	20.	6.	2.	.30
+	2 COMBINED AT	C67A	257.	14.75	185.	70.	24.	.31
+	ROUTED TO	67ATC	256.	15.08	184.	70.	24.	.31
+	HYDROGRAPH AT	SUP2	445.	12.92	383.	218.	73.	.01
+	ROUTED TO	RSUP2	397.	16.33	380.	218.	73.	.01
+	HYDROGRAPH AT	67B	714.	12.25	105.	35.	12.	.53
+	DIVERSION TO	D67B	714.	12.25	73.	21.	7.	.53
+	HYDROGRAPH AT	RET67B	457.	12.50	46.	14.	5.	.53
+	2 COMBINED AT	C67B	496.	12.50	396.	232.	78.	.54
+	ROUTED TO	67BTC	412.	17.50	396.	232.	78.	.54
+	HYDROGRAPH AT	67C	1019.	12.42	146.	44.	15.	.93
+	DIVERSION TO	D67C	1019.	12.42	126.	34.	11.	.93
+	HYDROGRAPH AT	RET67C	295.	12.83	34.	11.	4.	.93
+	3 COMBINED AT	C67C	668.	15.08	594.	311.	105.	1.78
+	ROUTED TO	67CTE	662.	16.25	590.	311.	105.	1.78
+	HYDROGRAPH AT	67D	183.	12.17	20.	6.	2.	.13
+	DIVERSION TO	D67D	183.	12.17	17.	5.	2.	.13

+	HYDROGRAPH AT RET67D	52.	12.50	5.	1.	0.	.13
+	ROUTED TO 67DTE	17.	13.17	4.	1.	0.	.13
+	HYDROGRAPH AT 67E	771.	12.25	111.	36.	12.	.58
+	DIVERSION TO D67E	771.	12.25	91.	25.	8.	.58
+	HYDROGRAPH AT RET67E	268.	12.67	34.	11.	4.	.58
+	3 COMBINED AT CP67E	680.	16.25	605.	321.	108.	2.49
+	ROUTED TO 67T68	678.	16.58	605.	321.	108.	2.49
+	HYDROGRAPH AT 68A	695.	12.08	76.	25.	9.	.35
+	DIVERSION TO D68A	695.	12.08	55.	16.	5.	.35
+	HYDROGRAPH AT RET68A	392.	12.25	32.	10.	3.	.35
+	2 COMBINED AT C68A	690.	16.58	614.	330.	111.	2.84
+	ROUTED TO 68ATB	690.	16.58	614.	330.	111.	2.84
+	HYDROGRAPH AT 68B	582.	12.00	58.	20.	7.	.25
+	DIVERSION TO D68B	582.	12.00	42.	12.	4.	.25
+	HYDROGRAPH AT RET68B	293.	12.08	26.	8.	3.	.25
+	2 COMBINED AT CP68B	700.	16.58	622.	338.	114.	3.09
+	ROUTED TO 68BT69	696.	17.08	620.	338.	114.	3.09
+	HYDROGRAPH AT 69	208.	12.00	22.	7.	2.	.09
+	DIVERSION TO D69	208.	12.00	16.	5.	2.	.09
+	HYDROGRAPH AT RET69	106.	12.17	9.	3.	1.	.09
+	2 COMBINED AT C69	699.	17.08	623.	340.	115.	3.18
+	ROUTED TO 69T71	695.	17.83	622.	340.	115.	3.18
+	HYDROGRAPH AT 71	1960.	12.17	258.	89.	30.	1.09
	DIVERSION TO						

+		D71	1960.	12.17	187.	53.	18.	1.09
	HYDROGRAPH AT							
+		RET71	1065.	12.33	114.	35.	12.	1.09
	3 COMBINED AT							
+		CP71	967.	17.25	843.	454.	152.	8.82
	ROUTED TO							
+		71T72	947.	18.33	843.	454.	152.	8.82
	2 COMBINED AT							
+		EMFWAR	1834.	14.17	1389.	689.	245.	25.63
	ROUTED TO							
+		WARTKN	1788.	14.33	1381.	689.	245.	25.63
	HYDROGRAPH AT							
+		CAP1A	217.	2.00	217.	217.	217.	.01
	ROUTED TO							
+		RCAP1A	217.	2.50	217.	217.	217.	.01
	HYDROGRAPH AT							
+		CAP1B	217.	2.00	217.	217.	217.	.01
	ROUTED TO							
+		RCAP1B	217.	2.58	217.	217.	217.	.01
	HYDROGRAPH AT							
+		65AW	555.	12.25	70.	21.	7.	.43
	DIVERSION TO							
+		D65AW	555.	12.25	58.	16.	5.	.43
	HYDROGRAPH AT							
+		RE65AW	187.	12.58	19.	6.	2.	.43
	3 COMBINED AT							
+		C65AW	621.	12.58	453.	440.	436.	.45
	ROUTED TO							
+		65AWTB	484.	14.58	452.	440.	436.	.45
	HYDROGRAPH AT							
+		65A	2593.	12.50	507.	168.	56.	2.54
	ROUTED TO							
+		65ATB	635.	16.67	446.	166.	56.	2.54
	HYDROGRAPH AT							
+		65B	1552.	12.42	271.	88.	29.	1.37
	DIVERSION TO							
+		D65B	1552.	12.42	218.	60.	20.	1.37
	HYDROGRAPH AT							
+		RET65B	669.	12.83	89.	28.	9.	1.37
	3 COMBINED AT							
+		CP65B	1110.	16.67	920.	629.	500.	4.36
	ROUTED TO							
+		65T66	1106.	17.00	919.	629.	500.	4.36
	HYDROGRAPH AT							
+		66A	446.	12.17	46.	14.	5.	.26
	DIVERSION TO							
+		D66A	446.	12.17	39.	11.	4.	.26

+	HYDROGRAPH AT RET66A	105.	12.42	11.	3.	1.	.26
+	ROUTED TO 66ATB	37.	13.17	10.	3.	1.	.26
+	HYDROGRAPH AT 66B	605.	12.58	104.	32.	11.	.67
+	DIVERSION TO D66B	605.	12.58	90.	24.	8.	.67
+	HYDROGRAPH AT RET66B	168.	13.08	24.	7.	2.	.67
+	2 COMBINED AT CP66B	197.	13.08	34.	11.	4.	.93
+	ROUTED TO 66BTC	150.	13.58	33.	11.	4.	.93
+	HYDROGRAPH AT 66C	707.	12.25	94.	30.	10.	.50
+	DIVERSION TO D66C	707.	12.25	77.	21.	7.	.50
+	HYDROGRAPH AT RET66C	257.	12.58	29.	9.	3.	.50
+	2 COMBINED AT CP66C	232.	12.58	58.	19.	6.	1.43
+	ROUTED TO 66CTD	140.	14.00	56.	19.	6.	1.43
+	HYDROGRAPH AT 66D	651.	12.08	75.	26.	9.	.31
+	DIVERSION TO D66D	651.	12.08	55.	16.	5.	.31
+	HYDROGRAPH AT RET66D	350.	12.25	32.	10.	3.	.31
+	2 COMBINED AT C66D	346.	12.25	84.	29.	10.	1.74
+	2 COMBINED AT CP66	1138.	16.92	956.	651.	507.	6.10
+	ROUTED TO 66DT70	1136.	17.17	955.	651.	507.	6.10
+	HYDROGRAPH AT 70A	1144.	12.08	124.	41.	14.	.54
+	DIVERSION TO D70A	1144.	12.08	94.	26.	9.	.54
+	HYDROGRAPH AT RET70A	569.	12.25	48.	15.	5.	.54
+	2 COMBINED AT C70A	1148.	17.17	971.	663.	511.	6.64
+	ROUTED TO 70ATB	1147.	17.50	970.	663.	511.	6.64
+	HYDROGRAPH AT 70B	647.	12.17	92.	31.	10.	.38

+	DIVERSION TO	D70B	647.	12.17	68.	19.	6.	.38
+	HYDROGRAPH AT	RET70B	363.	12.42	38.	12.	4.	.38
+	2 COMBINED AT	CP70B	1157.	17.58	983.	672.	514.	7.02
+	ROUTED TO	70BT76	1148.	18.25	980.	672.	514.	7.02
+	HYDROGRAPH AT	76B	1157.	12.17	158.	53.	18.	.64
+	DIVERSION TO	D76B	1157.	12.17	117.	33.	11.	.64
+	HYDROGRAPH AT	RET76B	539.	12.42	66.	20.	7.	.64
+	2 COMBINED AT	CP76B	1162.	18.25	998.	688.	519.	7.66
+	HYDROGRAPH AT	72	1422.	12.17	202.	69.	23.	.84
+	DIVERSION TO	D72	1422.	12.17	156.	44.	15.	.84
+	HYDROGRAPH AT	RET72	682.	12.42	80.	25.	8.	.84
+	2 COMBINED AT	KNOX	1265.	12.50	1023.	707.	526.	8.50
+	2 COMBINED AT	EMFKNX	2541.	14.33	2283.	1343.	755.	34.13
+	ROUTED TO	KNXTRY	2503.	14.58	2277.	1343.	755.	34.13
+	HYDROGRAPH AT	76A	2137.	12.58	427.	136.	45.	1.91
+	DIVERSION TO	D76A	2137.	12.58	338.	93.	31.	1.91
+	HYDROGRAPH AT	RET76A	987.	13.00	141.	43.	14.	1.91
+	2 COMBINED AT	EMFRAY	2585.	14.58	2321.	1367.	763.	36.04
+	HYDROGRAPH AT	73A	378.	13.33	96.	24.	8.	.95
+	ROUTED TO	73ATB	306.	13.83	96.	24.	8.	.95
+	HYDROGRAPH AT	73B	585.	12.17	61.	18.	6.	.42
+	DIVERSION TO	D73B	585.	12.17	56.	15.	5.	.42
+	HYDROGRAPH AT	RET73B	77.	12.67	10.	3.	1.	.42
	2 COMBINED AT							

+		CP73B	313.	13.83	104.	27.	9.	1.37
+	ROUTED TO	73BTC	277.	14.67	104.	27.	9.	1.37
+	HYDROGRAPH AT	73C	1399.	12.00	139.	48.	16.	.58
+	DIVERSION TO	D73C	1399.	12.00	103.	29.	10.	.58
+	HYDROGRAPH AT	RET73C	707.	12.08	59.	18.	6.	.58
+	2 COMBINED AT	CP73C	600.	12.08	160.	44.	15.	1.95
+	ROUTED TO	73T74C	299.	15.00	157.	44.	15.	1.95
+	HYDROGRAPH AT	74A	306.	13.33	77.	19.	6.	.75
+	ROUTED TO	74ATB	240.	13.92	76.	19.	6.	.75
+	HYDROGRAPH AT	74B	452.	12.25	43.	11.	4.	.33
+	DIVERSION TO	D74B	452.	12.25	43.	11.	4.	.33
+	HYDROGRAPH AT	RET74B	1.	17.75	1.	0.	0.	.33
+	2 COMBINED AT	CP74B	240.					1.08
+	ROUTED TO	74BTC	235.					1.08
+	HYDROGRAPH AT	74C	767.					.34
+	DIVERSION TO	D74C	767.					.34
+	HYDROGRAPH AT	RET74C	491.					.34
+	3 COMBINED AT	CP74C	478.					3.37
+	ROUTED TO	74CT75	477.					3.37
+	HYDROGRAPH AT	75	1047. ←					4.01
+	2 COMBINED AT	CP75	1468.	14.75	702.	191.	64.	7.38
+	ROUTED TO	75TCP	1274.	15.33	701.	191.	64.	7.38
+	HYDROGRAPH AT	77A	556.	13.75	174.	43.	14.	1.74
+	ROUTED TO	77ATB	474.	14.17	173.	43.	14.	1.74

THE Q FOR SUB-BASIN 75 DOES NOT INCLUDE THE 0.25 RATIO VALUE DISCUSSED ON PAGE 20 OF THIS REPORT.

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+	HYDROGRAPH AT	77B	524.	12.17	44.	12.	4.	.36
+	DIVERSION TO	D77B	524.	12.17	32.	8.	3.	.36
+	HYDROGRAPH AT	RET77B	337.	12.33	13.	3.	1.	.36
+	2 COMBINED AT	CP77B	474.	14.17	185.	47.	16.	2.10
+	ROUTED TO	77BTC	465.	14.50	183.	46.	15.	2.10
+	HYDROGRAPH AT	77C	678.	12.00	67.	23.	8.	.28
+	DIVERSION TO	D77C	678.	12.00	50.	14.	5.	.28
+	HYDROGRAPH AT	RET77C	330.	12.08	29.	9.	3.	.28
+	2 COMBINED AT	C77C	480.	14.50	209.	55.	18.	2.38
+	ROUTED TO	77CT78	473.	14.75	208.	55.	18.	2.38
+	HYDROGRAPH AT	78A	601.	13.75	188.	47.	16.	1.88
+	ROUTED TO	78ATB	494.	14.33	187.	47.	16.	1.88
+	HYDROGRAPH AT	78B	630.	12.17	67.	17.	6.	.39
+	2 COMBINED AT	C78B	633.	12.25	250.	64.	21.	2.27
+	ROUTED TO	78BTC	522.	12.50	250.	64.	21.	2.27
+	HYDROGRAPH AT	78C	663.	12.00	71.	23.	8.	.28
+	DIVERSION TO	D78C	610.	12.00	43.	12.	4.	.28
+	HYDROGRAPH AT	RET78C	608.	12.08	37.	11.	4.	.28
+	2 COMBINED AT	C78C	865.	12.08	284.	74.	25.	2.55
+	2 COMBINED AT	C78C2	946.	14.67	480.	126.	42.	4.93
+	ROUTED TO	78CT79	939.	14.92	477.	126.	42.	4.93
+	HYDROGRAPH AT	79A	944.	13.50	280.	70.	23.	2.01
+	2 COMBINED AT	C79A1	1454.	13.58	727.	189.	63.	6.94
+	HYDROGRAPH AT	78F	1077.	14.17	403.	102.	34.	4.19

	ROUTED TO						
+	78FTD	984.	14.75	401.	102.	34.	4.19
	HYDROGRAPH AT						
+	78D	1545.	12.17	194.	62.	21.	.89
	DIVERSION TO						
+	D78D	1545.	12.17	154.	42.	14.	.89
	HYDROGRAPH AT						
+	RET78D	550.	12.42	64.	20.	7.	.89
	2 COMBINED AT						
+	C78D	1013.	14.75	455.	119.	40.	5.08
	HYDROGRAPH AT						
+	82A4	631.	13.83	210.	53.	18.	2.13
	ROUTED TO						
+	82A4T3	551.	14.33	209.	53.	18.	2.13
	HYDROGRAPH AT						
+	82A3	536.	14.17	199.	50.	17.	2.02
	2 COMBINED AT						
+	C82A3	1040.	14.25	399.	101.	34.	4.15
	ROUTED TO						
+	82A3T2	975.	14.67	397.	101.	34.	4.15
	HYDROGRAPH AT						
+	CAP2	64.	20.00	64.	64.	62.	.01
	ROUTED TO						
+	RCAP2	64.	22.83	64.	64.	61.	.01
	HYDROGRAPH AT						
+	82A2	879.	14.75	392.	104.	35.	4.13
	2 COMBINED AT						
+	C82A2	911.	14.75	427.	158.	95.	4.14
	HYDROGRAPH AT						
+	82A1	1123.	13.50	307.	77.	26.	3.12
	3 COMBINED AT						
+	C82A1	2047.	14.67	1039.	315.	147.	11.41
	ROUTED TO						
+	82ATD	2000.	14.92	1038.	315.	147.	11.41
	2 COMBINED AT						
+	C78D2	2808.	14.83	1420.	415.	181.	16.49
	ROUTED TO						
+	78DTE	2733.	15.25	1415.	415.	180.	16.49
	HYDROGRAPH AT						
+	78E	838.	12.75	158.	40.	13.	1.01
	2 COMBINED AT						
+	C78E	2733.	15.25	1516.	448.	192.	17.50
	ROUTED TO						
+	78T79B	2707.	15.42	1509.	446.	191.	17.50
	HYDROGRAPH AT						
+	79B	674.	13.08	161.	40.	13.	1.00
	2 COMBINED AT						

+		C79B	2712.	15.42	1631.	479.	202.	18.50
+	2 COMBINED AT	C79	3480.	15.17	2244.	640.	256.	25.44
+	ROUTED TO	79TCP	3469.	15.42	2233.	638.	255.	25.44
+	2 COMBINED AT	CPPWR	4539.	15.33	2797.	791.	306.	32.82
+	ROUTED TO	CPT80A	4529.	15.50	2783.	790.	305.	32.82
+	HYDROGRAPH AT	80A	2421.	12.83	595.	189.	63.	2.64
+	DIVERSION TO	D80A	73.	8.83	53.	17.	6.	2.64
+	HYDROGRAPH AT	RET80A	2421.	12.83	595.	172.	57.	2.64
+	2 COMBINED AT	CPOWER	4585.	15.50	3157.	929.	352.	35.46
+	2 COMBINED AT	EMFPOW	6474.	14.75	4792.	2170.	1073.	71.50
+	ROUTED TO	POWTWI	6470.	15.00	4788.	2170.	1073.	71.50
+	HYDROGRAPH AT	80B	1198.	12.50	223.	71.	24.	1.12
+	DIVERSION TO	D80B	15.	4.00	8.	2.	1.	1.12
+	HYDROGRAPH AT	RET80B	1198.	12.50	223.	69.	23.	1.12
+	2 COMBINED AT	MFWIL	6501.	15.00	4846.	2220.	1090.	72.62
+	ROUTED TO	WILTSP	6492.	15.25	4842.	2220.	1090.	72.62
+	HYDROGRAPH AT	82B	1558.	12.17	181.	59.	20.	.92
+	DIVERSION TO	TRW	1558.	12.17	181.	56.	19.	.92
+	HYDROGRAPH AT	D82B	19.	18.67	14.	4.	1.	.92
+	ROUTED TO	82BT83	18.	20.33	14.	4.	1.	.92
+	HYDROGRAPH AT	83	1378.	12.25	198.	65.	22.	1.01
+	DIVERSION TO	D83	1378.	12.25	150.	42.	14.	1.01
+	HYDROGRAPH AT	RET83	731.	12.50	76.	23.	8.	1.01
+	2 COMBINED AT	C83	598.	12.58	73.	25.	8.	1.93

+	ROUTED TO	83T84	182.	13.75	67.	25.	8.	1.93
+	HYDROGRAPH AT	84	1309.	12.25	193.	63.	21.	.99
+	DIVERSION TO	D84	1309.	12.25	154.	43.	14.	.99
+	HYDROGRAPH AT	RET84	599.	12.58	66.	21.	7.	.99
+	2 COMBINED AT	C84	448.	12.67	124.	44.	15.	2.92
+	ROUTED TO	84T85	274.	13.00	121.	44.	15.	2.92
+	HYDROGRAPH AT	85	1328.	12.25	192.	63.	21.	1.00
+	DIVERSION TO	D85	1328.	12.25	152.	42.	14.	1.00
+	HYDROGRAPH AT	RET85	591.	12.58	68.	21.	7.	1.00
+	2 COMBINED AT	C85	436.	12.58	179.	62.	21.	3.92
+	ROUTED TO	85T86	396.	13.17	175.	62.	21.	3.92
+	HYDROGRAPH AT	86	1342.	12.25	193.	64.	21.	1.00
+	DIVERSION TO	D86	1342.	12.25	154.	43.	14.	1.00
+	HYDROGRAPH AT	RET86	594.	12.58	67.	21.	7.	1.00
+	2 COMBINED AT	C86	505.	13.08	230.	80.	27.	4.92
+	ROUTED TO	86T91	490.	13.33	226.	80.	27.	4.92
+	HYDROGRAPH AT	87A	1041.	12.08	116.	40.	13.	.49
+	DIVERSION TO	D87A	1041.	12.08	87.	25.	8.	.49
+	HYDROGRAPH AT	RET87A	435.	12.25	49.	15.	5.	.49
+	ROUTED TO	87ATB	145.	12.75	46.	15.	5.	.49
+	HYDROGRAPH AT	87B	1022.	12.08	117.	40.	13.	.49
+	DIVERSION TO	D87B	1022.	12.08	87.	25.	8.	.49
+	HYDROGRAPH AT	RET87B	512.	12.25	50.	15.	5.	.49
+	2 COMBINED AT	C87	514.	12.25	95.	31.	10.	.98

+	ROUTED TO	87T88B	250.	12.92	92.	31.	10.	.98
+	HYDROGRAPH AT	88A	1139.	12.00	119.	41.	14.	.50
+	DIVERSION TO	D88A	1139.	12.00	88.	25.	8.	.50
+	HYDROGRAPH AT	RET88A	602.	12.17	51.	16.	5.	.50
+	ROUTED TO	88ATB	180.	12.67	48.	16.	5.	.50
+	HYDROGRAPH AT	88B	1034.	12.08	118.	41.	14.	.50
+	DIVERSION TO	D88B	1034.	12.08	89.	25.	8.	.50
+	HYDROGRAPH AT	RET88B	518.	12.25	49.	15.	5.	.50
+	2 COMBINED AT	C88B	524.	12.25	97.	31.	10.	1.00
+	2 COMBINED AT	C88	501.	12.25	181.	60.	20.	1.98
+	ROUTED TO	88T89	422.	13.42	178.	60.	20.	1.98
+	HYDROGRAPH AT	89A	1009.	12.08	118.	41.	14.	.50
+	DIVERSION TO	89A	1009.	12.08	88.	25.	8.	.50
+	HYDROGRAPH AT	RET89A	565.	12.25	50.	16.	5.	.50
+	ROUTED TO	89ATB	127.	13.08	46.	16.	5.	.50
+	HYDROGRAPH AT	89B	1047.	12.08	117.	40.	13.	.50
+	DIVERSION TO	D89B	1047.	12.08	87.	25.	8.	.50
+	HYDROGRAPH AT	RET89B	438.	12.17	50.	16.	5.	.50
+	2 COMBINED AT	C89B	438.	12.25	95.	31.	10.	1.00
+	2 COMBINED AT	C89	578.	13.25	260.	88.	29.	2.98
+	ROUTED TO	89T90	523.	14.42	255.	88.	29.	2.98
+	HYDROGRAPH AT	90A	939.	12.08	98.	33.	11.	.48
+	DIVERSION TO	D90A	939.	12.08	76.	21.	7.	.48
	HYDROGRAPH AT							

+	RET90A	456.	12.25	37.	12.	4.	.48
+ ROUTED TO	90ATB	73.	13.83	33.	12.	4.	.48
+ HYDROGRAPH AT	90B	668.	12.67	128.	39.	13.	.82
+ DIVERSION TO	D90B	379.	12.25	39.	12.	4.	.82
+ HYDROGRAPH AT	RET90B	668.	12.67	101.	27.	9.	.82
+ 2 COMBINED AT	C90B	664.	12.67	131.	39.	13.	1.30
+ 2 COMBINED AT	C90	873.	12.75	371.	124.	41.	4.28
+ ROUTED TO	90T91	824.	12.92	365.	124.	41.	4.28
+ HYDROGRAPH AT	91	667.	12.25	89.	29.	10.	.46
+ DIVERSION TO	D91	667.	12.25	69.	19.	6.	.46
+ HYDROGRAPH AT	RET91	302.	12.50	33.	10.	3.	.46
+ 3 COMBINED AT	CP91	966.	13.25	541.	192.	64.	9.66
+ ROUTED TO	91TEMF	963.	13.33	540.	192.	64.	9.66
+ HYDROGRAPH AT	81A	1656.	12.67	359.	119.	40.	1.81
+ DIVERSION TO	D81A	29.	2.67	10.	3.	1.	1.81
+ HYDROGRAPH AT	RET81A	1656.	12.67	359.	117.	39.	1.81
+ ROUTED TO	81ATB	1531.	13.00	359.	117.	39.	1.81
+ HYDROGRAPH AT	81B	1215.	12.25	180.	61.	20.	.84
+ DIVERSION TO	D81B	444.	11.92	55.	18.	6.	.84
+ HYDROGRAPH AT	RET81B	1215.	12.25	153.	43.	14.	.84
+ 3 COMBINED AT	RITTEN	2321.	13.08	952.	332.	111.	12.31
+ 2 COMBINED AT	EMFRIT	6981.	15.08	5377.	2455.	1169.	84.93

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

```
-----DSS---ZCLOSE Unit:  71,   File: FUTN.DSS
           Pointer Utilization:    .25
           Number of Records:      25
           File Size:      53.2  Kbytes
           Percent Inactive:     .0
```