Technical Data Notebook

Upper Rawhide Wash
Floodplain Delineation Study (FCD 98-12)

Prepared for:

Flood Control District of Maricopa County

Kimley-Horn and Associates, Inc.
October, 1999
KHA Project #091131.02

Registered Professional Engineer (Civil)
CERTIFICATE NO.
9529
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Date Signed 10/21/99
ARIZONA, U.S.A.

Kimley-Horn
and Associates, Inc.

Technical Data Notebook - Hydrology

Upper Rawhide Wash

Floodplain Delineation Study

FCD 98-12

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KHA 091131.02
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1 Introduction

1.1 PURPOSE

This floodplain delineation study has been undertaken at the request of the City of Scottsdale through the Flood Control District of Maricopa County (FCDMC) to develop Flood Insurance Study (FIS) watershed hydrology for the Upper Rawhide Wash in Scottsdale, Arizona. The study reflects current land use conditions and makes use of more detailed topographic mapping than was available for the original study.

1.2 AUTHORITY

The FCDMC retained the services of Kimley-Horn and Associates, Inc. for the delineation of the floodplain limits of the Upper Rawhide Wash. This report includes all supporting technical documentation for the floodplain delineation. The client contact for the study is as follows:

Project Manager: Mr. David Boggs, Senior Civil Engineer
Flood Control District of Maricopa County
2801 W. Durango
Phoenix, AZ 85009
(602) 506-1501

1.3 LOCATION

The project consists of approximately twelve (12) river miles of the Upper Rawhide Wash and four (4) of its major tributaries. The watershed is approximately 14 square miles. The study area is located as follows: (see Figure 1-1 and Figure 1-2).

Rawhide Wash (main stem): Starting at the current FIS limit of detailed study for Wash 4D (Rawhide Wash approximately 1,800 feet south of Dynamite Boulevard) and extending upstream approximately 6.9 miles to the Tonto National Forest Boundary/City of Scottsdale corporate boundary from Township 5 North, Range 4 East to Township 6 North, Range 5 East.

Tributary RW20: Starting at its confluence with Rawhide Wash and extending upstream approximately 1.1 miles to the south section line of Section 16 (Lone Mountain Road alignment), Township 5 North, Range 5 East.

Tributary RW18: Starting at its confluence with Rawhide Wash and extending upstream approximately 1.3 miles to a confluence located approximately 1,100 feet west of the east

section line of Section 16 (112th Street alignment), Township 5 North, Range 5 East.

Tributary RW17: Starting at its confluence with Tributary RW18 and extending upstream approximately 1.1 miles to the east section line of Section 9 (112th Street alignment), Township 5 North, Range 5 East.

Tributary RW16: Starting at its confluence with Tributary RW18 and extending upstream approximately 1.6 miles to the north section line of Section 9 (Carefree Highway alignment), Township 5 North, Range 5 East.

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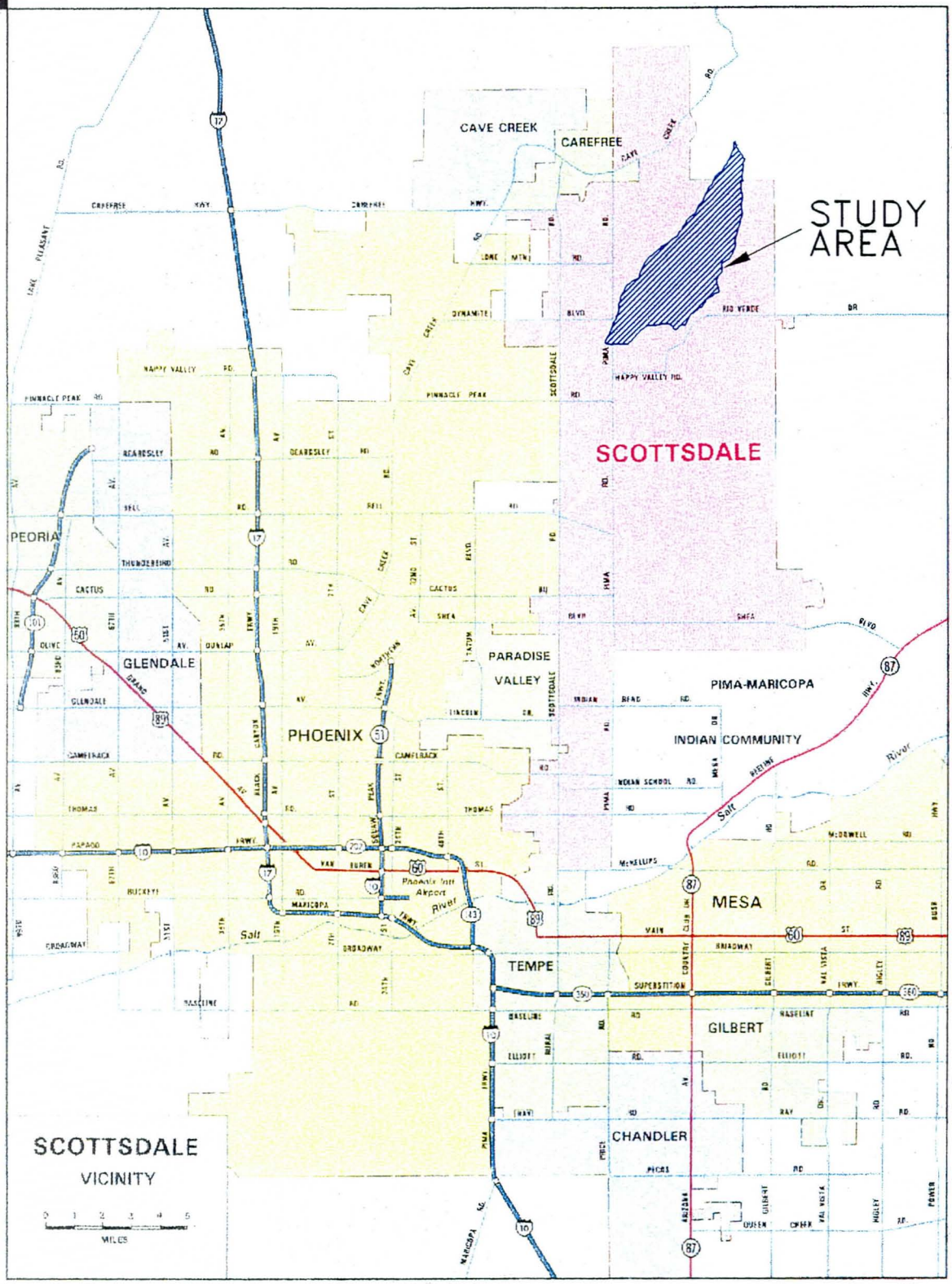

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FIGURE 1-1 VICINITY MAP

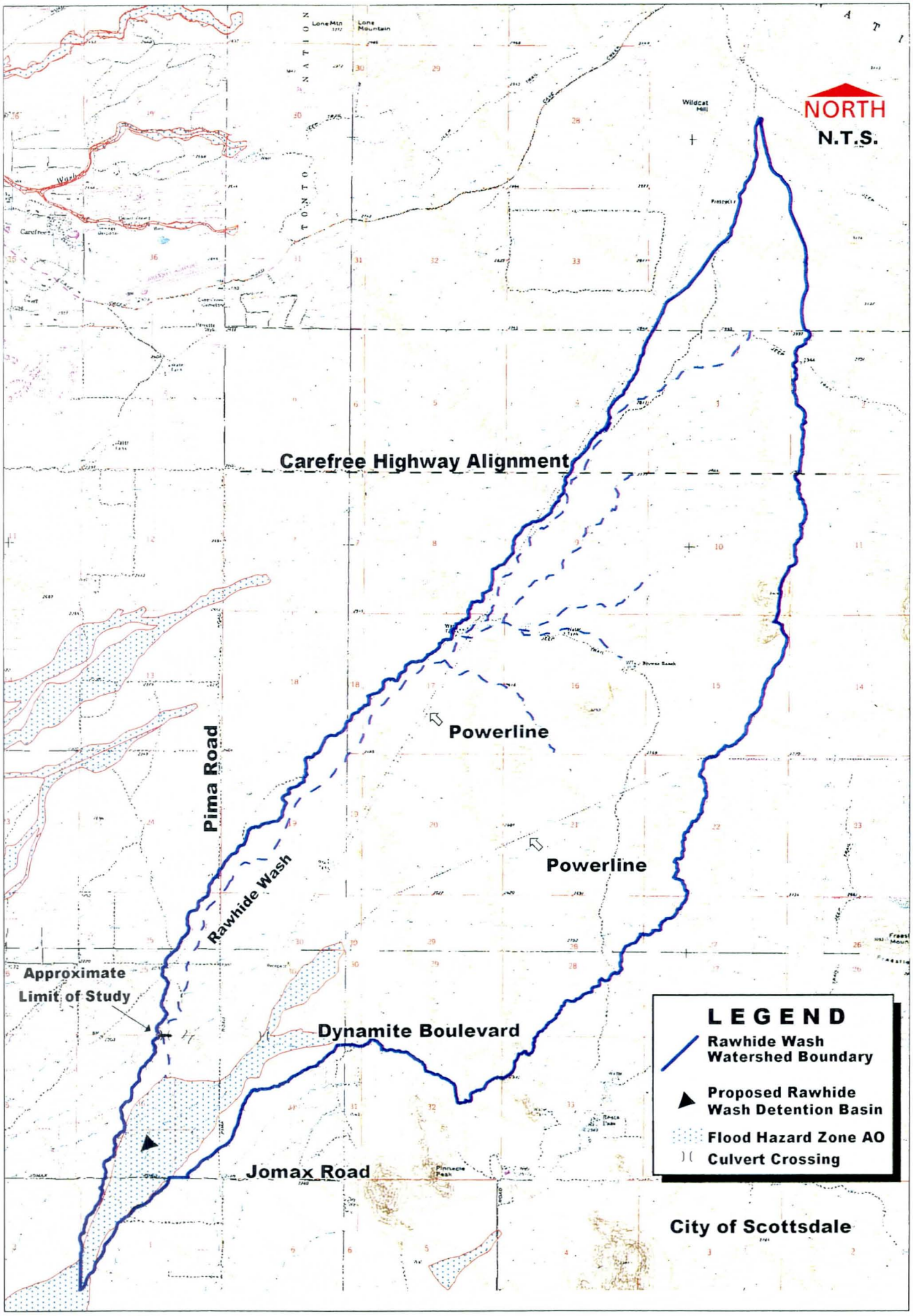

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FIGURE 1-2 LOCATION MAP

1.4 METHODOLOGY USED FOR HYDROLOGY AND HYDRAULICS

1.4.1 Hydrology

The hydrology for this project was completed using the methodology outlined in the Maricopa County Drainage Design Manual. The computer programs used were the District's Drainage Design Menu System (DDMS) and the U.S. Army Corps of Engineers HEC-1 modeling program. The Green and Ampt methodology was used for estimation of rainfall losses and the Clark Unit Hydrograph procedure was used to determine the runoff hydrographs.

1.4.2 Hydraulics

1.5 ACKNOWLEDGMENTS

Special thanks to those individuals who helped in the preparation of this report.

Representatives from the Flood Control District of Maricopa County:

David Boggs, Project Manager

Afshin Ahouraiyan, Hydrologist

Marta Dent, HIS

Representatives from the City of Scottsdale:

Collis Lovely, Drainage Planner

1.6 STUDY RESULTS

Table 2-1: Form SSA1-97

Study Documentation Abstract for FEMA Submittals	Initial Study ✓		Restudy		CLOMR		LOMR		Other

SECTION 2.1: Study Documentation for FEMA Submittals		
2.1.1	Date Study Accepted	
2.1.2	Study Contractor Contact Address Phone Internal Reference Number	Kimley-Horn and Associates, Inc. Doug Plasencia, P.E. (Project Manager) 7600 North 15th Street, Suite 250 Phoenix, AZ 85020 (602) 944-5500 091131.02
2.1.3	FEMA Technical Review Contractor Contact(s) Address Phone Internal Reference Number	
2.1.4	FEMA Regional Reviewer Phone	
2.1.5	State Technical Reviewer Phone	
2.1.6	Local Technical Reviewer Phone	David Boggs, Flood Control District of Maricopa County (602) 506-1501
2.1.7	Reach Description	T5N, R4E to T6N, R5E: FIRM Map No. 04013C0820E, Panel 820 of 4350; FIRM Map No. 04013C0850D, Panel 850 of 4350; FIRM Map No. 04013C1235E, Panel 1235 of 4350; FIRM Map No. 04013C1255E, Panel 1255 of 4350
2.1.8	USGS Quad Sheet(s) with original photo date & latest photo revision date	Cave Creek (1981) Curry's Corner (1982) Wildcat Hill (1981) McDowell Peak (1982)
2.1.9	Unique Conditions and Problems	
2.1.10	Coordination of Q's Discharges (Agency, Date, Comments)	
SECTION 2.2: FEMA Forms		

3 Survey and Mapping Information

3.1 FIELD SURVEY INFORMATION

3.2 MAPPING

4 Hydrology

4.1 METHOD DESCRIPTION

The hydrology for this project was completed using the methodology outlined in the Maricopa County Drainage Design Manual. The U.S. Army Corps of Engineers HEC-1 package was used for the modeling and routing runoff hydrographs. The Drainage Design Menu System (DDMS) developed by the FCDMC was utilized as a preprocessor for HEC-1.

4.2 PARAMETER ESTIMATION

4.2.1 Drainage Area Boundaries

The project consists of approximately twelve (12) river miles of the Upper Rawhide Wash and four (4) of its major tributaries. The watershed is approximately 14 square miles and extends from Hayden and Jomax Roads upstream approximately 6.9 miles to the Tonto National Forest Boundary/City of Scottsdale corporate boundary from Township 5 North, Range 4 East to Township 6 North, Range 5 East (see Figure 4-1).

The watershed is primarily undeveloped open desert with approximately 10 – 15% vegetative cover. There are several areas of rock outcrop, including Granite Mountain and three hills in the Brown Ranch area, the two biggest being locally referred to as "Big Brownie Hill" and "Little Brownie Hill".

The hydrology developed for the Upper Rawhide Wash watershed represents the existing land use and conditions at the time of the study. Existing land use conditions were determined through field observations and from the City of Scottsdale General Plan digital zoning maps and aerial photos. This hydrology model was developed for floodplain/floodway determination for Upper Rawhide Wash and its tributaries and also for the proposed Rawhide Wash Detention Basin to be located north of Jomax Road and west of Pima Road. The hydrologic model incorporates a proposed element of the Rawhide Wash Detention Basin Project. This element is a tributary diversion channel that diverts storm water flows from FEMA tributary streams 4A and 4B located east of the basin to the basin site.

4.2.2 Watershed Work Maps

Work maps for the Upper Rawhide study area have been included in Appendix G. The maps provide subbasin boundaries and locate concentration points (Figure G - 1), indicate flow paths

(Figure G - 2), and hydrograph routing paths (Figure G - 3) for the watershed.

Subbasin labels are represented by an alphanumeric numbering convention beginning with the lowest basin numbers in the northern portion of the watershed. The numbering starts with subbasin 005 and continues downstream to basin 070. The basin numbers are incremental and consecutive. In the event that a basin needs to be further subdivided the numbering remains consecutive. For example, in the first iteration of the model it was determined that basin 010 needed to be subdivided (from 010 to 010 and 012) to better represent the existing hydrologic conditions.

Concentration points are labeled CPxxx or CPxxxy where CP signifies concentration point, *xxx* is the concentration point number and *y* is a designation (A or B). In some cases hydrographs were combined prior to others for ease of hydraulic modeling. The *y* in the numbering scheme Cp*xxxy* indicates these locations and signifies that there is more than one set of hydrographs at the same point. For example, four hydrographs are ultimately combined at CP022, but they are separated into two groups, CP022A and CP022B before they are combined at CP022.

Routing labels were assigned according to the downstream end of a routing reach. The routing operations are labeled R*xxx-y*, where R stands for Route, *xxx* is the number of the concentration point the flow is being routed to and *y* denotes the number of the hydrograph routed. For example, there are two hydrographs being routed to Concentration Point (CP) CP030 so the KK record designations for these routings are R030-1 and R030-2. Diversion records are labeled D*xxx* where D denotes diversion and *xxx* is the CP immediately upstream of the diversion.

N/A
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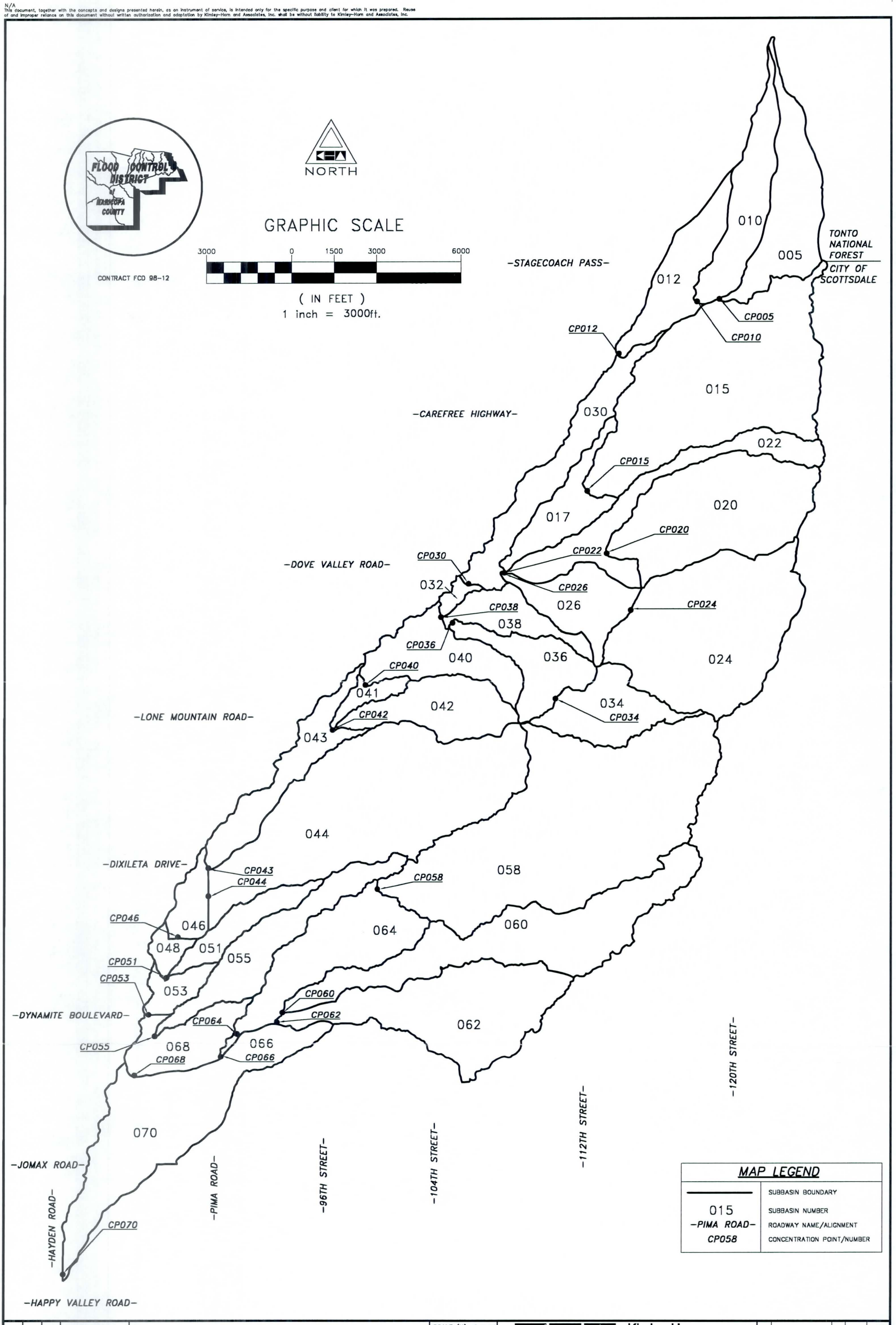

1 of 1	DWG. NAME 3102DR41	PROJECT NO. 091131.02	

UPPER RAWHIDE WASH

FLOODPLAIN DELINEATION STUDY GENERAL WATERSHED MAP

FIGURE 4-1

SCALE (H): 1"=3000'
SCALE (V): NONE
DRAWN BY: OJP
DESIGNED BY: LSM
CHECKED BY: RAE
DATE: 9/30/99

Kimley-Horn and Associates, Inc.

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NO.	REVISIONS	BY	DATE	APPR.

4.2.3 Gage Data

No gage data was used in this study to verify or calibrate the runoff characteristics of the study area basins since none was determined to be available at the time of the study.

4.2.4 Statistical Parameters

The most comprehensive and available source of rainfall data analysis for Maricopa County is the NOAA Precipitation-Frequency Atlas of the Western United States. It has been adopted by the Flood Control District of Maricopa County as the basis for point depth rainfall parameters used for drainage design purposes in Maricopa County. Other sources of long-term data records or statistical parameters for the study watershed were not readily available at the time of the study.

4.2.5 Precipitation

Precipitation in Maricopa County is strongly influenced by variation in climate. Precipitation is typically divided into two seasons of comparative rainfall depth: summer (June through October) and winter (December through March). Warm, moist tropical air can move into Arizona at any time of the year, but most often does so in the summer months, resulting in severe storms and local flooding. Storms of large areal extent are usually associated with frontal or convergence storm activity that may result in long duration rainfall and flooding of major drainage watercourses. These types of storms and flooding usually occur in the winter.

The FCDMC has adopted the 6-hour local storm as defined in the Drainage Design Manual Volume I Hydrology for drainage areas of 0 to 20 square miles. The 24-hour general storm duration using the SCS Type II distribution has also been used for this study. The PREFRE program within the DDMS was utilized along with point rainfall depths obtained from the NOAA Precipitation-Frequency Atlas of the Western United States (NOAA Atlas 2, Volume VIII). A reduction factor is used to convert the point rainfall to an equivalent uniform depth rainfall over the entire watershed. The depth-area reduction curve that is used in Maricopa County is the curve taken from Figure 15 of the NWS HYDRO-40 (Zehr and Myers, 1984). This depth area reduction factor is automatically determined and applied as part of the MCUHP1 program within the DDMS.

The PREFRE model is a part of the DDMS and it calculates precipitation depth-duration-frequency values for the Western United States. It was developed by the National Weather Service and was later revised by the Bureau of Reclamation. For this project, a Primary Zone number of 7 and a Short Duration Zone number of 8 were used for all major basins. The rainfall

depths used in the HEC-1 models are shown in Table 4-1.

Table 4-1: Point Rainfall Values

Storm Duration	100 year depth [in]
6 hour	3.45
24 hour	4.60

4.2.6 Physical Parameters

The unit hydrograph for the watershed is determined from the Clark Unit Hydrograph methodology outlined in Section 5.2 of the Drainage Design Manual for Maricopa County, Arizona; Volume I: Hydrology. This methodology is applied through the use of the DDMS program MCUHP1. The application of the Clark Unit Hydrograph requires the estimation of the time of concentration, Tc, for each subbasin. The MCUHP1 program facilitates the calculation of Tc using the Papadakis equation:

$$Tc = 11.4\, L^{0.50} K_b^{0.52} S^{-0.31} I^{-0.38}$$

Tc = time of concentration in hours
L = length of the flow path for Tc in miles
K_b = representative watershed resistance coefficient
S = watercourse slope in feet/mile
i = the average rainfall excess intensity, during the time Tc, in inches/hour

K_b values are assigned within DDMS based on the SCS Aguila-Carefree soil descriptions and the FCDMC land use codes (Figure G - 5). The land use codes have been modified to reflect different levels of vegetative cover. A table of land use characteristics has been included in Appendix D, Section D.2.

The preferred method for calculation of rainfall losses in Maricopa County is the Green and Ampt equation. According to the Drainage Design Manual for Maricopa County, Arizona - Volume I Hydrology, this method should be used for most studies in Maricopa County where the land surface is soil, the infiltration of water is controlled by soil texture, and the bulk density of the soil is affected by vegetation. The Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona, April 1986 was used in the determination of soil parameters. A soils map (Figure G - 4) showing the soil classifications in the study area is included in Appendix G. A table showing the combined soil survey information with XKSAT (hydraulic conductivity) is

included in section D.2, Appendix D.

Normal depth channel routing was used to route hydrographs downstream. Cross sections for each reach were cut using from the City of Scottsdale topography using BOSS RMS software. Each section was then input into FlowMaster as a BOSS section, and also reduced to an 8-point cross section. Verification was made to determine the accuracy of selected eight point sections as an approximation of the full section (see Appendix D). The value NSTPS for the RS record was determined using the normal depth velocities calculated by FlowMaster. The HEC-1 model was initially run with all NSTPS equal to 1. The flow rate generated for each routing reach was then input into the FlowMaster section beginning at the furthest upstream sections and the normal depth velocity was determined. This velocity was used to determine a new value for NSTPS and the HEC-1 model was re-run. These steps were repeated downstream until the NSTPS values remained unchanged.

4.3 PROBLEMS ENCOUNTERED DURING THE STUDY

4.3.1 Special Problems and Solutions

A review of available USGS topographic mapping and previous studies was conducted prior to the development of the existing conditions hydrologic models. The review indicated a potential flow split in Rawhide Wash at the downstream end of Basin 012. Subsequent field observations of Rawhide Wash at the southern limit of Basin 012 confirmed that a flow split occurs at this location. Initially, the flow split was assumed to be 50/50; 50% of the flow splits out of Rawhide Wash and leaves the project watershed, and the remaining 50% stays within Rawhide Wash proper. Field surveys of the flow split were conducted at the time of this study in order to develop a rating curve of the diversion. The results of the rating curve analysis are provided in Table 4-2.

Table 4-2: Rating Curve for Diversion at CP012

Rating Curve for Diversion at 012			
Elevation	Q_{total}	Q_{out}	$Q_{remaining}$
[ft]	[cfs]	[cfs]	[cfs]
2760.00	0	0	0
2760.25	43	10	33
2760.50	152	43	109
2760.75	330	105	225
2761.00	586	203	383
2761.25	929	344	584
2761.50	1365	533	832
2761.75	1904	776	1128
2762.00	2554	1078	1476

The rating curve could change in the future as peak flows and/or sedimentation change the channel cross section characteristics and distribution of flow.

4.3.2 Modeling Warning and Error Messages

The models contain the following warning message for some routing reaches (with different outflow ranges).

> *** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 5067. TO 9942. THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS. THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH).

For most warnings the flow being routed is less than the lower end of the range identified in the warning. The parameters have been adjusted as suggested by the warning, all routed hydrographs were examined and there are no outflows greater than peak inflows.

4.4 CALIBRATION

No calibration was undertaken due to the lack of available physical runoff volumes and peak discharges of record for the study area.

4.5 FINAL RESULTS

4.5.1 Hydrologic Analysis Results

See Table 4-3 for the peak discharge, time-to-peak, and runoff volume for each subbasin modeled and at each concentration point. Table 4-4 illustrates the peak flow rates at the split flow location at Concentration Point CP012.

Table 4-3: Hydrologic Analysis Results

Location	Basin Area	100 yr, 6 hr				100 yr, 24 hr			
		Peak Discharge	Q_{peak}/ sq. mi	Time to Peak	Runoff Volume	Peak Discharge	Q_{peak}/ sq. mi	Time to Peak	Runoff Volume
	[mi^2]	[cfs]	[cfs/mi^2]	[hr]	[ac-ft]	[cfs]	[cfs/mi^2]	[hr]	[ac-ft]
Basin 005	0.42	289	688	4.53	33	484	1152	12.30	35
Basin 010	0.34	230	676	4.50	25	395	1162	12.30	28
CP010	0.75	518	691	4.53	58	867	1156	12.33	62
Basin 012	0.30	194	647	4.50	21	344	1147	12.30	23
CP012	1.05	697	664	4.63	79	1111	1058	12.43	86
Basin 030	0.35	194	554	4.67	28	297	849	12.43	31
CP030A	1.40	552	394	5.37	81	731	522	13.17	88
Basin 015	1.27	1021	804	4.47	96	1766	1391	12.33	104
Basin 017	0.22	165	750	4.43	17	286	1300	12.27	19
CP022A	1.48	1163	786	4.63	113	1875	1267	12.47	123
Basin 020	0.76	803	1057	4.27	68	1458	1918	12.20	75
Basin 022	0.38	231	608	4.67	34	340	895	12.40	37
CP022B	1.14	996	874	4.50	102	1633	1432	12.40	111
CP022	2.62	2138	816	4.60	215	3445	1315	12.43	234
Basin 024	1.02	1273	1248	4.17	91	2481	2432	12.10	100
Basin 026	0.27	202	748	4.50	28	309	1144	12.27	32
CP026A	1.29	1388	1076	4.40	119	2481	1923	12.27	133
CP026	3.91	3421	875	4.50	334	5412	1384	12.40	367
CP030	5.32	3599	677	4.53	415	5666	1065	12.43	455
Basin 034	0.30	264	880	4.37	28	444	1480	12.27	31
Basin 036	0.25	261	1044	4.27	25	463	1852	12.17	28
CP036	0.55	477	867	4.50	53	648	1178	12.40	59
Basin 038	0.18	178	989	4.27	17	323	1794	12.17	19
CP038A	0.73	638	874	4.47	70	855	1171	12.30	79
Basin 032	0.03	26	867	4.23	2	55	1833	12.13	2
CP038	6.08	4204	691	4.57	487	6445	1060	12.43	536
Basin 040	0.33	282	855	4.30	25	529	1603	12.20	27
CP040	6.41	4373	682	4.67	512	6600	1030	12.50	563

Table 4-3 continued

Location	Basin Area	100 yr, 6 hr				100 yr, 24 hr			
		Peak Discharge	Q_{peak}/ sq. mi	Time to Peak	Runoff Volume	Peak Discharge	Q_{peak}/ sq. mi	Time to Peak	Runoff Volume
	[mi^2]	[cfs]	[cfs/mi^2]	[hr]	[ac-ft]	[cfs]	[cfs/mi^2]	[hr]	[ac-ft]
Basin 041	0.06	48	800	4.30	4	97	1617	12.17	5
Basin 042	0.32	306	956	4.27	26	579	1809	12.17	29
CP042	6.79	4581	675	4.70	542	6755	995	12.53	597
Basin 043	0.29	145	500	4.63	18	253	872	12.37	21
CP043	7.08	4646	656	4.87	561	6720	949	12.70	617
Basin 044	1.40	1234	881	4.37	108	2207	1576	12.27	119
Basin 046	0.11	97	882	4.27	8	191	1736	12.17	9
CP046	8.59	5319	619	4.93	677	7150	832	12.80	745
Basin 048	0.06	53	883	4.20	4	108	1800	12.13	4
Basin 051	0.16	112	700	4.50	13	192	1200	12.27	14
CP051	8.81	5380	611	5.00	693	7153	812	12.87	763
Basin 053	0.09	93	1033	4.23	8	175	1944	12.13	8
CP053	8.91	5403	606	5.00	701	7157	803	12.87	771
Basin 055	0.37	213	576	4.63	29	338	914	12.37	31
CP055	9.27	5564	600	5.03	730	7319	790	12.90	802
Basin 058	1.76	1483	843	4.47	136	2569	1460	12.33	148
Basin 060	0.78	500	641	4.63	65	764	979	12.40	70
Basin 062	0.73	614	841	4.40	61	1056	1447	12.27	67
CP062	1.51	1084	718	4.53	126	1707	1130	12.33	136
Basin 064	0.47	396	843	4.37	38	694	1477	12.27	41
CP064	3.74	2817	753	4.67	299	4244	1135	12.50	325
Basin 066	0.01	5	500	4.17	0	10	1000	12.07	0
CP066	3.74	2817	753	4.67	299	4243	1134	12.50	325
Basin 068	0.25	219	876	4.30	18	421	1684	12.20	20
CP068	13.27	7977	601	5.03	1047	9990	753	12.90	1146
Basin 070	0.79	462	585	4.60	49	833	1054	12.37	58
CP070	14.06	8079	575	5.23	1096	9940	707	13.07	1202

Table 4-4: Hydrologic Analysis Results - Diversion Record

HEC-1 Flows for Diversion at 012		
	6 hour storm	24 hour storm
	[cfs]	[cfs]
Flow to diversion	697	1111
Flow diverted out of study area	249	423
Flow remaining in study area	448	688

4.5.2 Verification of Results

Indirect Verification Methods

We have provided for verification of the hydrology for Upper Rawhide Wash by using the regional regression equations from the Arizona Department of Transportation. We conducted the verification using peak flow rates based on non-reduced rainfall and distributions for the existing conditions 100-year, 24-hour storm. We used the non-reduced rainfall for comparison with the peak subbasin discharges as computed using the region 12 and region 13 regression equations. A summary of the computations is in Appendix D.8.

Table D.8.1 is a summary of the HEC-1 peak discharges for the 100-year 24-hour with areal reduction. Table D.8.2 is a summary of the HEC-1 peak discharges for the 100-year 24-hour with no areal reduction. Both tables are for existing project conditions and provide a unit discharge for each subbasin in cfs per square mile.

Table D.8.3 summarizes the computation using the ADOT regression equations for indirect method No 2 (see page 10-5 ADOT highway drainage manual). Indirect method No. 2 provides a regression equation for the 100-year peak discharge and a regression equation for the maximum recorded discharge. A review of Table D.8.3 indicates fair agreement between the HEC-1 peak discharges and the ADOT indirect method 100-year discharge on a subbasin by subbasin comparison. Examination of the concentration points result in somewhat of a scatter of results. This is due to the fact that the HEC-1 model accounts for routing and summation of hydrographs for determination of peak discharges while the ADOT method only uses watershed area.

We have plotted on ADOT figures 10-3 and 10-4 the 100-year HEC-1 peak discharges for subbasins from 0.1 to 2.0 square miles and for 1.0 to 20 square miles, respectively. On figure 10-3, the plotted subbasins are well within the 75% tolerance limit lines about the 100-year

discharge line. On figure 10-4, the plotted subbasins are mainly located at the upper 75% tolerance limit. These plots indicate that the HEC-1 peak discharges are within reasonable expectations and agreement with previous studies conducted in Arizona.

Our next step for hydrology verification was to follow ADOT indirect method No. 3 using regional regression equations. Table D.8.4 provides a summary of the data required to use the regression equations presented in the ADOT manual. The Upper Rawhide Wash watershed is located in near the boundaries of regions 12 and 13. Therefore, we computed the 100-year peak discharge using the regression equations for both regions 12 and 13.

The results of the computations are plotted by subbasin area and 100-year discharge for region 12 on figures 10-20 and 10-21. Examination of the plotted data points on figure 10-20 indicates that most of the points are outside the "cloud of common values". This is due to the fact that the Upper Rawhide Wash subbasins are one-square mile or less in area as opposed to the drainage area range given in the cloud of common values. However, the drainage area versus peak discharge plotted values in figure 10-21 are relatively consistent with the regression line. We then plotted the 100-year discharge for region 13 on figure 10-22. We observe the same consistency in figure 10-22 as observed in figure 10-21. The plotted data points are clustered fairly well around the regression line and follow the trend of the regression.

Finally, we plotted the subbasin drainage area versus peak discharge on the USGS figures 41 and 42 from their report titled "Methods for Estimating Magnitude and Frequency of Floods in the Southwestern United States" (USGS Open file report 93-419). These figures are the same as the ADOT figures 10-20 and 10-21, but ADOT did not include the bounding limits as shown in the USGS figures. A review of the plots on figures 41 and 42 indicate that the regression results for the subbasins fall within the envelope curves and the 100-year peak discharge relationship for the regions 12 and 13.

The results of the verification analysis using the ADOT methodology indicates reasonable agreement between the HEC-1 model results and the regression results, particularly when plotted on the regression curves. Variations may be explained by differing site conditions relating to soils, land slope, drainage area, vegetation cover, land use, etc.

Comparison with Previous Models of the Watershed

The results of this study were compared to two other models - the General Drainage Plan for North Scottsdale, Arizona by Water Resources Associates, Inc. (WRA) completed in 1988 and revised in 1989; and the Scottsdale Desert Greenbelt, Rawhide Wash Hydrologic Report done

by Greiner, Inc. and the City of Scottsdale in 1994. The Greiner hydrology was based on the WRA hydrology and followed the same methodology.

The draft TDN completed by Kimley-Horn and Associates, Inc. (KHA) and dated January 1999 contained a detailed comparison of KHA's preliminary results and the above models. After subsequent discussions with the Flood Control District of Maricopa County and the City of Scottsdale review comments were incorporated and this report reflects the final results. Adjustments were made to the vegetative cover, subbasins and concentration points were added and flow paths were adjusted. A comparison of final flow values for this study are in Table 4-3.

Table 4-3: Comparison of Final Flows to WRA & Greiner Models

	Drainage Area	*100 yr, 6 hr*		*100 yr, 24 hr*	
		Q	Time to peak	Q	Time to peak
	[mi^2]	[cfs]	[hr]	[cfs]	[hr]
KHA	14.06	8079	5.2	9940	13.07
Greiner	13.81	10456	3.9		
% difference		23%			

The differences in the methodologies used for the WRA & Greiner studies and the KHA study are as follows:

Table 4-4: HEC-1 Methodology Comparison (KHA vs. WRA & Greiner)

Method	*KHA*	*WRA & Greiner*
Rainfall Distribution	FCDMC Point rainfall	Hypothetical Storm
Losses	Green and Ampt	SCS Curve Number
Unit Hydrograph	Clark - Time of concentration from DDMS - Papadakis	Kinematic wave method

The variation of flow results between our work and that done by others is primarily related to the Clark Unit Hydrograph vs. Kinematic Wave Routing and perhaps to a lesser degree the difference in rainfall distribution. We are of the opinion that the Clark Unit Hydrograph better represents natural watersheds, and that the District's rainfall distributions are more representative of a high intensity desert storm.

As a further check we put the Greiner hypothetical rainfall distribution into our model, with the

100-yr rainfall of 3.66 in. This resulted in a watershed Qpeak for the KHA model of 12,346 cfs as compared to Greiner's Qpeak of 10,456 cfs.

5 Hydraulics

5.1 METHOD DESCRIPTION

5.2 WORK STUDY MAPS

5.3 PARAMETER ESTIMATION

5.3.1 Roughness Coefficients

5.3.2 Expansion and Contraction Coefficients

5.4 CROSS SECTION DESCRIPTION

5.5 MODELING CONSIDERATIONS

5.5.1 Hydraulic Jump and Drop Analysis

5.5.2 Bridges and Culverts

5.5.3 Levees and Dikes

5.5.4 Islands and Flow Splits

5.5.5 Ineffective Flow Areas

5.5.6 Supercritical Flow

5.6 FLOODWAY MODELING

5.7 PROBLEMS ENCOUNTERED DURING THE STUDY

5.7.1 Special Problems and Solutions

5.7.2 Modeling Warning and Error Messages

5.8 CALIBRATION

5.9 FINAL RESULTS

5.9.1 Hydraulic Analysis Results

5.9.2 Verification of Results

6 Erosion and Sediment Transport

6.1 METHOD DESCRIPTION

6.2 PARAMETER ESTIMATION

6.3 MODELING CONSIDERATIONS

6.4 PROBLEMS ENCOUNTERED DURING THE STUDY

6.4.1 Special Problems and Solutions

6.4.2 Modeling Warnings and Error Messages

6.5 CALIBRATION

6.6 FINAL RESULTS

6.6.1 Erosion and Sediment Transport Analysis Results

6.6.2 Verification of Results

7 Draft FIS Report Data

7.1 SUMMARY OF DISCHARGES

7.2 FLOODWAY DATA

7.3 ANNOTATED FLOOD INSURANCE RATE MAPS

7.4 FLOOD PROFILES

APPENDIX A References

A.1 DATA COLLECTION SUMMARY

A.2 REFERENCED DOCUMENTS

APPENDIX B General Documentation & Correspondence

B.1 SPECIAL PROBLEM REPORTS

B.2 CONTACT (TELEPHONE) REPORTS

B.3 MEETING MINUTES OR REPORTS

B.4 GENERAL CORRESPONDENCE

B.5 CONTRACT SCOPE

APPENDIX C Survey Field Notes

C.1 SURVEY FIELD NOTES FOR AERIAL MAPPING CONTROL

C.2 SURVEY FIELD NOTES FOR HYDROLOGIC MODELING

C.3 SURVEY FIELD NOTES FOR HYDRAULIC MODELING

APPENDIX D Hydrologic Analysis Supporting Documentation

D.1 PRECIPITATION DATA

```
*** O U T P U T   D A T A ***
     REVISED JUNE 1988 TO UPDATE COMPUTATION OF SHORT-DURATION VALUES

    PRECIPITATION FREQUENCY VALUES FOR Upper Rawhide Wash,
     PRIMARY ZONE NUMBER=   7
     SHORT-DURATION ZONE NUMBER=   8
```

POINT VALUES

DURATION	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR	
			RETURN PERIOD					
5-MIN	.40	.47	.53	.61	.67	.73	.88	5-MIN
10-MIN	.59	.71	.80	.93	1.03	1.13	1.35	10-MIN
15-MIN	.72	.89	1.01	1.18	1.31	1.44	1.75	15-MIN
30-MIN	.96	1.19	1.35	1.59	1.77	1.96	2.38	30-MIN
1-HR	1.17	1.47	1.68	1.98	2.21	2.45	2.99	1-HR
2-HR	1.31	1.66	1.91	2.25	2.52	2.79	3.41	2-HR
3-HR	1.41	1.79	2.06	2.43	2.73	3.02	3.69	3-HR
6-HR	1.60	2.04	2.34	2.78	3.11	3.45	4.23	6-HR
12-HR	1.83	2.35	2.71	3.23	3.63	4.03	4.94	12-HR
24-HR	2.05	2.66	3.08	3.68	4.14	4.60	5.66	24-HR

```
* IF YOUR SITE IS IN ARIZONA OR NEW MEXICO, PLEASE CONSULT THE
  FOLLOWING PAPER FOR REVISED DEPTH-AREA VALUES:
    DEPTH-AREA RATIOS IN THE SEMI-ARID SOUTHWEST UNITED STATES
    NOAA TECHNICAL MEMORANDUM NWS HYDRO-40
    ZEHR AND MYERS
    AUGUST 1984
```

INPUT DATA

```
PROJECT NAME=Upper Rawhide Wash,
ZONE= 7    SHORT-DURATION ZONE= 8
LATITUDE=   .00    LONGITUDE= 100.00    ELEVATION=    0
2-YR, 6-HR PCPN= 1.60    100-YR, 6-HR PCPN= 3.45
2-YR, 24-HR PCPN= 2.05    100-YR, 24-HR PCPN= 4.60
```

D.2 PHYSICAL PARAMETER CALCULATIONS

DDMS Input Data								
Basin ID		Basin Area		Top Elev.	Bottom Elev.	Travel Length	Travel Length	Basin Slope
	(sf)	(mi^2)	(acres)	(ft)	(ft)	(ft)	(mi)	(ft/mi)
005	11,629,309	0.417	267	3140	2866	11097	2.10	130
010	9,323,166	0.334	214	3130	2848	10168	1.93	146
012	8,273,168	0.297	190	2970	2774	8859	1.68	117
015	35,357,241	1.268	812	2960	2686	13391	2.54	108
017	5,986,909	0.215	137	2755	2604	7096	1.34	112
020	21,219,770	0.761	487	3020	2673	9186	1.74	199
022	10,589,401	0.380	243	2952	2604	14294	2.71	129
024	28,428,373	1.020	653	3237	2684	8234	1.56	355
026	7,536,216	0.270	173	3250	2604	5861	1.11	582
030	9,921,955	0.356	228	2821	2582	12568	2.38	100
032	900,351	0.032	21	2598	2558	2112	0.40	100
034	8,320,157	0.298	191	2804	2676	6977	1.32	97
036	7,003,459	0.251	161	3054	2570	7238	1.37	353
038	5,095,160	0.183	117	3198	2558	6723	1.27	503
040	9,180,512	0.329	211	2896	2490	8150	1.54	263
041	1,791,128	0.064	41	2544	2452	3656	0.69	133
042	9,048,122	0.325	208	3054	2452	7965	1.51	399
043	7,956,499	0.285	183	2512	2322	10120	1.92	99
044	39,011,591	1.399	896	3054	2306	15811	2.99	250
046	3,102,819	0.111	71	2346	2278	3528	0.67	102
048	1,537,499	0.055	35	2300	2252	2295	0.43	110
051	4,541,717	0.163	104	2432	2252	7420	1.41	128
053	2,608,978	0.094	60	2313	2230	3461	0.66	127
055	10,168,239	0.365	233	2516	2213	12851	2.43	124
058	48,929,471	1.755	1123	2808	2464	15088	2.86	120
060	21,722,678	0.779	499	2846	2330	17922	3.39	152
062	20,323,405	0.729	467	2680	2324	11908	2.26	158
064	13,232,251	0.475	304	2555	2287	9528	1.80	149
066	176,121	0.006	4	2287	2265	934	0.18	124
068	6,915,310	0.248	159	2324	2184	5543	1.05	133
070	22,122,557	0.794	508	2385	2035	14143	2.68	131

Soils Table (by Area)

Basin ID	Basin Area (acres)	Soil Type - Area in Acres									
		6	33	61	63	72	90	93	96	121	122
005	267		13.8	219.9					33.3		
010	214		97.7	84.6					31.7		
012	190		172.2						17.7		
015	812		260.1	475.2		0.5		9.5	66.3		
017	137	8.7	51.1	19.8		8.0			49.8		
020	487			263.2	94.9	74.8		6.6	47.3	0.3	
022	243		2.7	92.0		43.6		3.7	82.1	18.9	
024	653		6.1	305.1	106.6	96.9		42.6	95.2	0.1	
026	173	0.2	7.5			123.2		0.3	18.8	22.1	
030	228	8.7	88.2	80.4		38.7		1.3	10.4		
032	21	9.0		10.7				1.0			
034	191		13.8	81.5	4.1	78.6		7.8	5.3		
036	161			31.0	10.2	77.3			26.0	16.3	
038	117			63.6		50.3			1.0	2.1	
040	211	27.0	2.4	164.3	11.4	4.7				0.9	
041	41	14.6	1.0	25.5							
042	208	4.7		162.4	37.4	3.2					
043	183	44.9	40.2	67.0							30.6
044	896	48.5	36.4	679.3	71.5	7.8			32.6		19.4
046	71	34.9		8.3					28.1		
048	35	19.7							15.6		
051	104	2.7	38.6	20.8					42.1		
053	60	14.0							45.8		
055	233	0.5	103.3	59.1	17.0				53.5		
058	1123	51.1	1.3	935.6	46.8	1.7			86.8		
060	499			407.0	64.2				27.5		
062	467	10.9		330.9	96.2				28.6		
064	304	47.4	3.1	106.4	25.2				121.7		
066	4	3.0							1.2		
068	159	34.4	23.0					32.5	51.6		17.2
070	508	111.6	28.6	8.4			28.4	17.9	70.2		242.7

	Basin 17		Basin 43	
6	8.7	→	44.9	Sandy loam & gravelly sandy loam
33	51.1	Same	40.2	Very gravelly loam
61	19.8	→	67.0	Very gravelly sandy loam & gravelly sandy loam
72	8	←	0	Very gravelly clay loam
96	49.8	←	0	Very gravelly clay loam
122	0	→	30.6	gravelly sandy loam

Soil Descriptions

FCDMC Soil Number	NRCS Soil Code	XKSAT	Rock Outcropping	Soil Definition
43	6	0.620	0	Anthony-Arizo complex
70	33	0.230	0	Eba very gravelly loam, 1 to 8 percent slopes
98	61	0.150	0	Gran-Wickenburg complex, 1 to 10 percent slopes
100	63	0.140	25	Gran-Wickenburg-Rock outcrop complex, 1 to 7 percent slopes
109	72	0.090	30	Lehmans-Rock outcrop complex, 8 to 65 percent slopes
127	90	0.390	0	Momoli gravelly sandy loam, 1 to 5 percent slopes
130	93	0.330	0	Nickel-Cave complex, 8 to 30 percent slopes
133	96	0.070	0	Pinaleno-Tres Hermanos complex, 1 to 10 percent slopes
158	121	0.120	0	Tres Hermanos-Anthony complex, 1 to 5 percent slopes
159	122	0.330	0	Vado gravelly sandy loam, 1 to 5 percent slopes

EXISTING CONDITIONS LAND USE (by %)				
Basin ID	Basin Area (acres)	Desert10 [1] %	Desert15 [2] %	VLDR [3] %
005	267		100%	0%
010	214		100%	0%
012	190		100%	0%
015	812		100%	0%
017	137		100%	0%
020	487		100%	0%
022	243		100%	0%
024	653		100%	0%
026	173		100%	0%
030	228		100%	0%
032	21		100%	0%
034	191		100%	0%
036	161		100%	0%
038	117		100%	0%
040	211		100%	0%
041	41		100%	0%
042	208		100%	0%
043	183		100%	0%
044	896		100%	0%
046	71		100%	0%
048	35		100%	0%
051	104		100%	0%
053	60		100%	0%
055	233		100%	0%
058	1123		100%	0%
060	499	100%		0%
062	467	100%		0%
064	304	100%		0%
066	4	100%		0%
068	159	100%		0%
070	508	90%		10%

Notes:

All land use categories are based on the Maricopa County Hydrology Manual Table 4.2a and the DDMS.
The desert categories were adjusted to reflect differing values of vegetative cover.

[1] Desert conditions with 10% vegetative cover

[2] Desert conditions with 15% vegetative cover

[3] Very Low Density Residential

D.3 HYDROGRAPH ROUTING DATA

Normal Depth (8 Point Cross Section) Routing Parameters

		From CP005 to CP010	From CP010 to CP012	From CP012 to CP030	From CP015 to CP022	From CP020 to CP022	From CP024 to CP026	From CP026 to CP030	From CP030 to CP038	From CP034 to CP036	From CP036 to CP038	From CP038 to CP040	From CP040 to CP042	From CP042 to CP043	From CP043 to CP046	From CP044 to CP046	From CP046 to CP051	From CP051 to CP053	From CP053 to CP055	From CP055 to CP068	From CP058 to CP064	From CP060 to CP062	From CP062 to CP064	From CP064 to CP066	From CP066 to CP068	From CP068 to CP070
		R010-1	R012-1	R030-1	R022-1	R022-2	R026-1	R030-2	R038-1	R036-1	R038-2	R040-1	R042-1	R043-1	R046-1	R046-2	R051-1	R053-1	R055-1	R068-1	R064-1	R062-1	R064-2	R066-1	R068-2	R070-1
RC Record	*LOB n-value*	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
	Channel n-value	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	ROB n-value	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
	Reach length [ft]	884	3716	10780	4466	4146	4976	1354	1605	5295	424	3775	2074	7504	2845	1882	1557	1681	784	1728	7694	441	1554	934	3234	7672
	High elev	2866	2848	2774	2686	2673	2684	2604	2582	2676	2570	2558	2490	2452	2322	2306	2278	2252	2230	2213	2464	2330	2324	2287	2265	2184
	Low elev	2848	2774	2582	2604	2604	2604	2582	2558	2570	2558	2490	2452	2322	2278	2278	2252	2230	2213	2184	2287	2324	2287	2265	2184	2035
	Slope [ft/ft]	0.020	0.020	0.018	0.018	0.017	0.016	0.016	0.015	0.020	0.028	0.018	0.018	0.017	0.015	0.015	0.017	0.013	0.022	0.017	0.023	0.014	0.024	0.024	0.025	0.019
RX Record	LOB Sta	0	261	428	9714	9805	9712	214	290	9725	9837	47	263	263	9425	9425	9822	9910	111	111	0	0	0	0	198	65
	LOB Sta	40	486	497	9798	9902	9782	314	378	9842	9891	75	349	349	9601	9601	9952	9935	154	154	76	20	17	31	224	146
	Left Bank Sta	156	555	753	9905	10081	9851	479	536	9891	9971	224	381	381	9923	9923	9976	9963	304	304	102	38	23	66	270	307
	Channel Sta	172	684	780	9943	10090	9931	518	538	9970	9988	433	450	450	9945	9945	9977	9987	389	389	111	41	73	104	283	320
	Channel Sta	201	700	835	10002	10098	9950	654	607	10030	10012	448	522	522	10019	10019	10023	10041	510	510	117	45	83	111	684	550
	Right Bank Sta	253	716	868	10037	10102	10050	771	650	10032	10126	523	756	756	10043	10043	10046	10046	725	725	118	60	90	121	688	565
	ROB Sta	546	743	897	10299	10253	10176	852	727	10143	10148	609	847	847	10267	10267	10356	10075	836	836	168	94	99	129	721	810
	ROB Sta	571	778	992	10412	10264	10237	939	753	10241	10177	678	973	973	10435	10435	10509	10085	937	937	205	128	107	149	769	964
RY Record	LOB Elev	2870	2794	2684	2740	2690	2700	2604	2582	2652	2578	2540	2486	2486	2300	2300	2275	2249	2208	2208	2323	2328	2316	2281	2228	2130
	LOB Elev	2868	2792	2680	2734	2686	2692	2598	2576	2646	2574	2536	2482	2482	2288	2288	2261	2245	2202	2202	2321	2328	2316	2281	2227	2127
	Left Bank Elev	2868	2792	2680	2734	2688	2688	2598	2574	2646	2574	2530	2476	2476	2288	2288	2262	2245	2200	2200	2319	2327	2315	2280	2227	2127
	Channel Elev	2866	2790	2682	2728	2686	2688	2596	2572	2642	2572	2530	2482	2482	2286	2286	2260	2238	2197	2197	2319	2327	2315	2280	2226.5	2125.5
	Channel Elev	2866	2788	2682	2726	2686	2686	2596	2572	2642	2572	2528	2476	2476	2286	2286	2260	2238	2199	2199	2320	2326	2316	2281	2226.5	2125.5
	Right Bank Elev	2868	2790	2680	2728	2688	2686	2594	2580	2644	2574	2528	2476	2476	2288	2288	2263	2239	2200	2200	2321	2326	2317	2282	2227	2124
	ROB Elev	2868	2792	2680	2730	2688	2696	2594	2580	2644	2576	2534	2482	2482	2288	2288	2264	2239	2199	2199	2323	2327	2318	2283	2227	2124
	ROB Elev	2870	2794	2684	2740	2690	2700	2604	2582	2652	2578	2540	2486	2486	2302	2302	2275	2242	2208	2208	2325	2327	2319	2284	2228	2130

D.4 ROUTING PARAMETER – NSTPS

Existing Conditions NSTPS Values For RK Records

6-hour ***NMIN 2 min***

	From CP005 to CP010	From CP010 to CP012	From CP012 to CP030	From CP015 to CP022	From CP020 to CP022	From CP024 to CP026	From CP026 to CP030	From CP030 to CP038	From CP034 to CP036	From CP036 to CP038	From CP038 to CP040	From CP040 to CP042	From CP042 to CP043	From CP043 to CP046	From CP044 to CP046	From CP046 to CP051	From CP051 to CP053	From CP053 to CP055	From CP055 to CP068	From CP058 to CP064	From CP060 to CP062	From CP062 to CP064	From CP064 to CP066	From CP066 to CP068	From CP068 to CP070
	R010-1	R012-1	R030-1	R022-1	R022-2	R026-1	R030-2	R038-1	R036-1	R038-2	R040-1	R042-1	R043-1	R046-1	R046-2	R051-1	R053-1	R055-1	R068-1	R064-1	R062-1	R064-2	R066-1	R068-2	R070-1
Reach length [ft]	884	3716	10780	4466	4146	4976	1354	1605	5295	424	3775	2074	7504	2845	1882	1557	1681	784	1728	7694	441	1554	934	3234	7672
Velocity [ft/s]	5.60	5.48	3.08	5.68	4.83	6.57	6.68	7.26	4.69	5.69	7.62	8.07	8.17	5.37	3.48	7.52	15.60	6.86	6.86	7.89	5.30	8.41	10.28	6.08	8.28
NSTPS	1	6	29	7	7	6	2	2	9	1	4	2	8	4	5	2	1	1	2	8	1	2	1	4	8
Qpre	292	518	431	1003	766	1167	3345	3505	264	475	4080	4256	4391	4421	1229	5296	5374	5393	5532	1480	500	1083	2791	2755	7845
Qnstps	289	514	430	1011	776	1189	3409	3573	260	477	4166	4353	4516	4607	1222	5296	5374	5393	5532	1446	500	1083	2815	2801	7845
Diff[1]	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

24-hour ***NMIN 2 min***

	From CP005 to CP010	From CP010 to CP012	From CP012 to CP030	From CP015 to CP022	From CP020 to CP022	From CP024 to CP026	From CP026 to CP030	From CP030 to CP038	From CP034 to CP036	From CP036 to CP038	From CP038 to CP040	From CP040 to CP042	From CP042 to CP043	From CP043 to CP046	From CP044 to CP046	From CP046 to CP051	From CP051 to CP053	From CP053 to CP055	From CP055 to CP068	From CP058 to CP064	From CP060 to CP062	From CP062 to CP064	From CP064 to CP066	From CP066 to CP068	From CP068 to CP070
	R010-1	R012-1	R030-1	R022-1	R022-2	R026-1	R030-2	R038-1	R036-1	R038-2	R040-1	R042-1	R043-1	R046-1	R046-2	R051-1	R053-1	R055-1	R068-1	R064-1	R062-1	R064-2	R066-1	R068-2	R070-1
Reach length [ft]	884	3716	10780	4466	4146	4976	1354	1605	5295	424	3775	2074	7504	2845	1882	1557	1681	784	1728	7694	441	1554	934	3234	7672
Velocity [ft/s]	6.45	6.01	3.48	6.18	5.48	6.67	7.90	8.54	5.51	6.15	8.87	9.25	9.25	6.16	4.32	7.34	15.33	7.59	7.65	9.12	6.01	9.89	11.78	6.99	8.97
NSTPS	1	5	26	6	6	6	1	2	8	1	4	2	7	4	4	2	1	1	2	7	1	1	1	4	7
Qpre	482	860	595	1748	1293	2173	5286	5541	415	632	6270	6557	6555	6583	2096	7079	7142	7136	7280	2296	763	1696	4162	4164	9712
Qnstps	484	832	599	1674	1293	2173	5366	5638	415	647	6379	6557	6555	6583	2118	7079	7142	7136	7280	2367	761	1694	4241	4181	9712
Diff[1]	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

[1] Tolerance = 5%

D.5 RESERVOIR ROUTING DATA

There was no reservoir routing in the models.

D.6 FLOW SPLITS AND DIVERSIONS DATA

Rating Curve for Diversion at 012

Elevation	Q_{total}	Q_{out}	$Q_{remaining}$
[ft]	[cfs]	[cfs]	[cfs]
2760.00	0	0	0
2760.25	43	10	33
2760.50	152	43	109
2760.75	330	105	225
2761.00	586	203	383
2761.25	929	344	584
2761.50	1365	533	832
2761.75	1904	776	1128
2762.00	2554	1078	1476

HEC-1 Flows for Diversion at 012

	6 hour storm	24 hour storm
	[cfs]	[cfs]
Flow to diversion	697	1111
Flow diverted out of study area	249	423
Flow remaining in study area	448	688

Rating Table for Flow Diverted Out at CP012
Rating Table for Irregular Channel

Project Description	
Worksheet	012 Diversion out
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data	
Slope	0.019000 ft/ft

Options	
Current Roughness Method	mproved Lotter's Method
Open Channel Weighting Method	mproved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Attribute	Minimum	Maximum	Increment
Water Surface Elevation (ft	2,760.00	2,762.00	0.25

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)
2,760.00	N/A	N/A	N/A	N/A	N/A
2,760.25	10.29	1.84	5.6	31.68	31.67
2,760.50	42.87	2.71	15.8	50.31	50.29
2,760.75	104.95	3.41	30.7	68.95	68.91
2,761.00	203.30	4.04	50.3	87.58	87.52
2,761.25	344.15	4.62	74.5	106.21	106.14
2,761.50	533.31	5.16	103.4	124.84	124.76
2,761.75	776.26	5.67	136.9	143.47	143.38
2,762.00	1,078.22	6.16	175.1	162.11	162.00

Rating Table for Flows Remaining After Diversion at CP012
Rating Table for Irregular Channel

Project Description	
Worksheet	012 Diversion remaining
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	0.019000 ft/ft	0.017 ??

Options	
Current Roughness Method	mproved Lotter's Method
Open Channel Weighting Method	mproved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Attribute	Minimum	Maximum	Increment
Water Surface Elevation (ft	2,760.00	2,762.00	0.25

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)
2,760.00	N/A	N/A	N/A	N/A	N/A
2,760.25	32.72	2.18	15.0	66.26	66.25
2,760.50	109.04	3.29	33.1	78.52	78.50
2,760.75	225.45	4.15	54.3	90.78	90.75
2,761.00	383.18	4.88	78.5	103.04	103.00
2,761.25	584.46	5.53	105.8	115.31	115.25
2,761.50	831.84	6.11	136.1	127.57	127.50
2,761.75	1,128.04	6.65	169.5	139.83	139.75
2,762.00	1,475.77	7.16	206.0	152.09	152.00

D.7 HYDROLOGIC CALCULATIONS

This section contains the DDMS and HEC-1 output files.

1

*** O U T P U T D A T A ***
REVISED JUNE 1988 TO UPDATE COMPUTATION OF SHORT-DURATION VALUES

PRECIPITATION FREQUENCY VALUES FOR Upper Rawhide Wash,
PRIMARY ZONE NUMBER= 7
SHORT-DURATION ZONE NUMBER= 8

POINT VALUES

RETURN PERIOD

DURATION	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR	
5-MIN	.40	.47	.53	.61	.67	.73	.88	5-MIN
10-MIN	.59	.71	.80	.93	1.03	1.13	1.35	10-MIN
15-MIN	.72	.89	1.01	1.18	1.31	1.44	1.75	15-MIN
30-MIN	.96	1.19	1.35	1.59	1.77	1.96	2.38	30-MIN
1-HR	1.17	1.47	1.68	1.98	2.21	2.45	2.99	1-HR
2-HR	1.31	1.66	1.91	2.25	2.52	2.79	3.41	2-HR
3-HR	1.41	1.79	2.06	2.43	2.73	3.02	3.69	3-HR
6-HR	1.60	2.04	2.34	2.78	3.11	3.45	4.23	6-HR
12-HR	1.83	2.35	2.71	3.23	3.63	4.03	4.94	12-HR
24-HR	2.05	2.66	3.08	3.68	4.14	4.60	5.66	24-HR

* IF YOUR SITE IS IN ARIZONA OR NEW MEXICO, PLEASE CONSULT THE
FOLLOWING PAPER FOR REVISED DEPTH-AREA VALUES:
DEPTH-AREA RATIOS IN THE SEMI-ARID SOUTHWEST UNITED STATES
NOAA TECHNICAL MEMORANDUM NWS HYDRO-40
ZEHR AND MYERS
AUGUST 1984

INPUT DATA

PROJECT NAME=Upper Rawhide Wash,
ZONE= 7 SHORT-DURATION ZONE= 8
LATITUDE= .00 LONGITUDE= 100.00 ELEVATION= 0
2-YR, 6-HR PCPN= 1.60 100-YR, 6-HR PCPN= 3.45
2-YR, 24-HR PCPN= 2.05 100-YR, 24-HR PCPN= 4.60

* * * * E N D O F R U N * * * *

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LAND USE DEFAULTS
Desert10, DRY, 10.0, 3.00, 0.150, 0.035, Low
Desert15, DRY, 15.0, 3.00, 0.150, 0.035, Low
Desert20, DRY, 20.0, 3.00, 0.150, 0.035, Low
Desert30, DRY, 30.0, 3.00, 0.150, 0.035, Low
Desert40, DRY, 40.0, 3.00, 0.150, 0.035, Low
V.L.D.R, NORMAL, 30.0, 5.00, 0.300, 0.050, Low
L.D.R., NORMAL, 50.0, 15.00, 0.300, 0.050, Low
M.D.R., NORMAL, 50.0, 30.00, 0.250, 0.050, Low
M.F.R., NORMAL, 50.0, 45.00, 0.250, 0.050, Low
Ind, NORMAL, 60.0, 55.00, 0.150, 0.030, Min
Comm, NORMAL, 75.0, 80.00, 0.100, 0.020, Min
Park, NORMAL, 90.0, 0.00, 0.200, 0.100, Hi
END_FILE
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SUBBASIN 005, Aguila/Carefree, Acres, 1.0000
SOILS
33, 14.000, 5.2, 0.23, 0
61, 220.000, 82.4, 0.15, 0
96, 33.000, 12.4, 0.07, 0
SOIL TOTALS
267.000 0.14 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 267.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
267.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 005, 0.417 0.15 0.39 3 6.20 0.15 0.035 0.047
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 010, Aguila/Carefree, Acres, 1.0000
SOILS
33, 98.000, 45.6, 0.23, 0
61, 85.000, 39.5, 0.15, 0
96, 32.000, 14.9, 0.07, 0
SOIL TOTALS
215.000 0.16 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 215.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
215.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 010, 0.336 0.15 0.39 3 5.80 0.17 0.035 0.048
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 012, Aguila/Carefree, Acres, 1.0000
SOILS
33, 172.000, 90.5, 0.23, 0
96, 18.000, 9.5, 0.07, 0
SOIL TOTALS
0.000 0.21 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 190.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
190.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 012, 0.297 0.15 0.37 3 5.20 0.22 0.035 0.049
0.37 0.25 0.00 5.20
100 0 0
SUBBASIN 015, Aguila/Carefree, Acres, 1.0000
SOILS
33, 260.100, 32.0, 0.23, 0
61, 475.200, 58.6, 0.15, 0
72, 0.500, 0.1, 0.09, 30
93, 9.500, 1.2, 0.33, 0
96, 66.300, 8.2, 0.07, 0
SOIL TOTALS
811.600 0.16 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 811.600, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
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LAND USE TOTALS
811.60 15 3 0.15 0.035 0.040 -0.013750 0.080
MCUHP 015, 1.268 0.15 0.39 3 5.80 0.17 0.035 0.040
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 017, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 6.5, 0.62, 0
33, 51.000, 37.0, 0.23, 0
61, 20.000, 14.5, 0.15, 0
72, 8.000, 5.8, 0.09, 30
SOIL TOTALS
138.000 0.14 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 138.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
138.00 15 3 0.15 0.035 0.051 -0.013750 0.080
MCUHP 017, 0.216 0.15 0.39 5 6.20 0.15 0.035 0.051
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 020, Aguila/Carefree, Acres, 1.0000
SOILS
61, 263.000, 54.0, 0.15, 0
63, 95.000, 19.5, 0.14, 25
72, 75.000, 15.4, 0.09, 30
93, 7.000, 1.4, 0.33, 0
96, 47.000, 9.7, 0.07, 0
SOIL TOTALS
487.000 0.13 9 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 487.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
487.00 15 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 020, 0.761 0.15 0.38 12 6.40 0.14 0.035 0.043
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 022, Aguila/Carefree, Acres, 1.0000
SOILS
33, 3.000, 1.2, 0.23, 0
61, 92.000, 37.7, 0.15, 0
72, 44.000, 18.0, 0.09, 30
93, 4.000, 1.6, 0.33, 0
96, 82.000, 33.6, 0.07, 0
121, 19.000, 7.8, 0.12, 0
SOIL TOTALS
244.000 0.11 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 244.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
244.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 022, 0.381 0.15 0.36 8 6.80 0.12 0.035 0.047
0.36 0.17 0.00 6.80
100 0 0
SUBBASIN 024, Aguila/Carefree, Acres, 1.0000
SOILS
33, 6.000, 0.9, 0.23, 0
61, 305.000, 46.7, 0.15, 0
63, 107.000, 16.4, 0.14, 25
72, 97.000, 14.9, 0.09, 30
93, 43.000, 6.6, 0.33, 0
96, 95.000, 14.5, 0.07, 0
121, 0.100, 0.0, 0.12, 0
SOIL TOTALS
```

```
653.100 0.13 9 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 653.100, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
653.10 15 3 0.15 0.035 0.041 -0.013750 0.080
MCUHP 024, 1.020 0.15 0.38 12 6.40 0.14 0.035 0.041
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 026, Aguila/Carefree, Acres, 1.0000
SOILS
33, 7.500, 4.4, 0.23, 0
6, 0.200, 0.1, 0.62, 0
63, 0.000, 0.0, 0.14, 25
72, 123.000, 71.5, 0.09, 30
93, 0.300, 0.2, 0.33, 0
96, 19.000, 11.0, 0.07, 0
121, 22.000, 12.8, 0.12, 0
SOIL TOTALS
172.000 0.10 21 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 172.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
172.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 026, 0.269 0.15 0.35 24 7.00 0.11 0.035 0.049
0.35 0.15 0.00 7.00
100 0 0
SUBBASIN 030, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 4.0, 0.62, 0
33, 88.000, 38.8, 0.23, 0
61, 80.000, 35.2, 0.15, 0
72, 39.000, 17.2, 0.09, 30
93, 1.000, 0.4, 0.33, 0
96, 10.000, 4.4, 0.07, 0
SOIL TOTALS
227.000 0.17 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 227.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
227.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 030, 0.355 0.15 0.39 8 5.70 0.18 0.035 0.048
0.39 0.25 0.00 5.70
100 0 0
SUBBASIN 032, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 42.9, 0.62, 0
61, 11.000, 52.4, 0.15, 0
93, 1.000, 4.8, 0.33, 0
SOIL TOTALS
21.000 0.29 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 21.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
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LAND USE TOTALS
21.000 15 3 0.15 0.035 0.062 -0.013750 0.080
MCUHP 032, 0.033 0.15 0.35 3 4.55 0.31 0.035 0.062
0.35 0.25 0.00 4.55
100 0 0
SUBBASIN 034, Aguila/Carefree, Acres, 1.0000
SOILS
33, 14.000, 7.3, 0.23, 0
61, 81.000, 42.4, 0.15, 0
63, 4.000, 2.1, 0.14, 25
72, 79.000, 41.4, 0.09, 30
93, 8.000, 4.2, 0.33, 0
96, 5.000, 2.6, 0.07, 0
SOIL TOTALS
191.000 0.13 13 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 191.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
191.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 034, 0.298 0.15 0.38 16 6.40 0.14 0.035 0.049
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 036, Aguila/Carefree, Acres, 1.0000
SOILS
61, 31.000, 19.4, 0.15, 0
63, 10.000, 6.2, 0.14, 25
72, 77.000, 48.1, 0.09, 30
96, 26.000, 16.2, 0.07, 0
121, 16.000, 10.0, 0.12, 0
SOIL TOTALS
160.000 0.10 16 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 160.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
160.00 15 3 0.15 0.035 0.050 -0.013750 0.080
MCUHP 036, 0.250 0.15 0.35 19 7.00 0.11 0.035 0.050
0.35 0.15 0.00 7.00
100 0 0
SUBBASIN 038, Aguila/Carefree, Acres, 1.0000
SOILS
61, 64.000, 54.7, 0.15, 0
72, 50.000, 42.7, 0.09, 30
96, 1.000, 0.9, 0.07, 0
121, 2.000, 1.7, 0.12, 0
SOIL TOTALS
117.000 0.12 13 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 117.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
117.00 15 3 0.15 0.035 0.052 -0.013750 0.080
MCUHP 038, 0.183 0.15 0.37 16 6.60 0.13 0.035 0.052
0.37 0.19 0.00 6.60
100 0 0
SUBBASIN 040, Aguila/Carefree, Acres, 1.0000
SOILS
6, 27.000, 12.9, 0.62, 0
33, 2.000, 1.0, 0.23, 0
61, 164.000, 78.1, 0.15, 0
63, 11.000, 5.2, 0.14, 25
72, 5.000, 2.4, 0.09, 30
121, 1.000, 0.5, 0.12, 0
SOIL TOTALS
210.000 0.18 2 100
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XKSAT XKSAT
hand calc DDMS

hand calc DDMS
0.21 ≠ 0.18

DDMS

0.21 hand calcs

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LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 210.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
210.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 040, 0.328 0.15 0.38 5 5.60 0.19 0.035 0.048
0.38 0.25 0.00 5.60
100 0 0
SUBBASIN 041, Aguila/Carefree, Acres, 1.0000
SOILS
6, 14.600, 35.5, 0.62, 0
33, 0.980, 2.4, 0.23, 0
61, 25.500, 62.1, 0.15, 0
SOIL TOTALS
41.080 0.25 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 41.080, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
41.080 15 3 0.15 0.035 0.058 -0.013750 0.080
MCUHP 041, 0.064 0.15 0.35 3 4.80 0.26 0.035 0.058
0.35 0.25 0.00 4.80
100 0 0
SUBBASIN 042, Aguila/Carefree, Acres, 1.0000
SOILS
6, 4.720, 2.3, 0.62, 0
61, 162.400, 78.2, 0.15, 0
63, 37.400, 18.0, 0.14, 25
72, 3.200, 1.5, 0.09, 30
SOIL TOTALS
207.720 0.15 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 207.720, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
207.72 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 042, 0.325 0.15 0.40 8 6.00 0.16 0.035 0.048
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 043, Aguila/Carefree, Acres, 1.0000
SOILS
6, 44.900, 24.6, 0.62, 0
33, 40.200, 22.0, 0.23, 0
61, 67.000, 36.7, 0.15, 0
122, 30.700, 16.8, 0.33, 0
SOIL TOTALS
182.800 0.27 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 182.800, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
182.80 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 043, 0.286 0.15 0.35 3 4.65 0.29 0.035 0.049
0.35 0.25 0.00 4.65
100 0 0
SUBBASIN 044, Aguila/Carefree, Acres, 1.0000
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SOILS
6, 49.000, 5.5, 0.62, 0
33, 36.000, 4.0, 0.23, 0
61, 679.000, 75.8, 0.15, 0
63, 72.000, 8.0, 0.14, 25
72, 8.000, 0.9, 0.09, 30
96, 33.000, 3.7, 0.07, 0
122, 19.000, 2.1, 0.33, 0
SOIL TOTALS
896.000 0.16 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 896.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
896.00 15 3 0.15 0.035 0.039 -0.013750 0.080
MCUHP 044, 1.400 0.15 0.39 5 5.80 0.17 0.035 0.039
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 046, Aguila/Carefree, Acres, 1.0000
SOILS
6, 35.000, 49.3, 0.62, 0
61, 8.000, 11.3, 0.15, 0
96, 28.000, 39.4, 0.07, 0
SOIL TOTALS
71.000 0.22 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 71.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
71.000 15 3 0.15 0.035 0.055 -0.013750 0.080
MCUHP 046, 0.111 0.15 0.36 3 5.10 0.23 0.035 0.055
0.36 0.25 0.00 5.10
100 0 0
SUBBASIN 048, Aguila/Carefree, Acres, 1.0000
SOILS
6, 20.000, 55.6, 0.62, 0
96, 16.000, 44.4, 0.07, 0
SOIL TOTALS
36.000 0.24 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 36.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
36.000 15 3 0.15 0.035 0.059 -0.013750 0.080
MCUHP 048, 0.056 0.15 0.35 3 4.90 0.25 0.035 0.059
0.35 0.25 0.00 4.90
100 0 0
SUBBASIN 051, Aguila/Carefree, Acres, 1.0000
SOILS
6, 3.000, 2.9, 0.62, 0
33, 39.000, 37.1, 0.23, 0
61, 21.000, 20.0, 0.15, 0
96, 42.000, 40.0, 0.07, 0
SOIL TOTALS
105.000 0.14 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 105.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
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Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
105.00 15 3 0.15 0.035 0.052 -0.013750 0.080
MCUHP 051, 0.164 0.15 0.39 3 6.20 0.15 0.035 0.052
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 053, Aguila/Carefree, Acres, 1.0000
SOILS
6, 14.000, 23.3, 0.62, 0
96, 46.000, 76.7, 0.07, 0
SOIL TOTALS
60.000 0.12 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 60.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
60.000 15 3 0.15 0.035 0.056 -0.013750 0.080
MCUHP 053, 0.094 0.15 0.37 3 6.60 0.13 0.035 0.056 K5
0.37 0.19 0.00 6.60
100 0 0
SUBBASIN 055, Aguila/Carefree, Acres, 1.0000
SOILS
6, 1.000, 0.4, 0.62, 0
33, 103.000, 44.0, 0.23, 0
61, 59.000, 25.2, 0.15, 0
63, 17.000, 7.3, 0.14, 25
96, 54.000, 23.1, 0.07, 0
SOIL TOTALS
234.000 0.15 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 234.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
234.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 055, 0.366 0.15 0.40 5 6.00 0.16 0.035 0.047
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 058, Aguila/Carefree, Acres, 1.0000
SOILS
6, 51.000, 4.5, 0.62, 0
33, 1.000, 0.1, 0.23, 0
61, 936.000, 83.3, 0.15, 0
63, 47.000, 4.2, 0.14, 25
72, 2.000, 0.2, 0.09, 30
96, 87.000, 7.7, 0.07, 0
SOIL TOTALS
1124.000 0.15 1 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 1124.00, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
1124.0 15 3 0.15 0.035 0.038 -0.013750 0.080
MCUHP 058, 1.756 0.15 0.40 4 6.00 0.16 0.035 0.038
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 060, Aguila/Carefree, Acres, 1.0000
SOILS
61, 407.000, 81.7, 0.15, 0
63, 64.000, 12.9, 0.14, 25
96, 27.000, 5.4, 0.07, 0
SOIL TOTALS
498.000 0.14 3 100
LAND USE
Desert10, 498.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
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Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
498.00 10 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 060, 0.778 0.15 0.39 6 6.20 0.14 0.035 0.043
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 062, Aguila/Carefree, Acres, 1.0000
SOILS
6, 11.000, 2.4, 0.62, 0
61, 331.000, 70.9, 0.15, 0
63, 96.000, 20.6, 0.14, 25
96, 29.000, 6.2, 0.07, 0
SOIL TOTALS
467.000 0.15 5 100
LAND USE
Desert10, 467.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
467.00 10 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 062, 0.730 0.15 0.40 8 6.00 0.15 0.035 0.043
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 064, Aguila/Carefree, Acres, 1.0000
SOILS
6, 47.000, 15.5, 0.62, 0
33, 3.000, 1.0, 0.23, 0
61, 106.000, 35.0, 0.15, 0
63, 25.000, 8.3, 0.14, 25
96, 122.000, 40.3, 0.07, 0
SOIL TOTALS
303.000 0.14 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 303.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
303.00 15 3 0.15 0.035 0.046 -0.013750 0.080
MCUHP 064, 0.473 0.15 0.39 5 6.20 0.15 0.035 0.046
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 066, Aguila/Carefree, Acres, 1.0000
SOILS
6, 3.000, 75.0, 0.62, 0
96, 1.000, 25.0, 0.07, 0
SOIL TOTALS
4.000 0.36 0 100
LAND USE
Desert10, 4.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.07,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
4.000 10 3 0.15 0.035 0.072 -0.013750 0.080
MCUHP 066, 0.006 0.15 0.35 3 4.20 0.36 0.035 0.072
0.35 0.25 0.00 4.20
100 0 0
SUBBASIN 068, Aguila/Carefree, Acres, 1.0000
SOILS
6, 34.000, 21.4, 0.62, 0
33, 23.000, 14.5, 0.23, 0
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93, 33.000, 20.8, 0.33, 0
96, 52.000, 32.7, 0.07, 0
122, 17.000, 10.7, 0.33, 0
SOIL TOTALS
159.000 0.22 0 100
LAND USE
Desert10, 159.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.05,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
159.00 10 3 0.15 0.035 0.050 -0.013750 0.080
MCUHP 068, 0.248 0.15 0.36 3 5.10 0.22 0.035 0.050
0.36 0.25 0.00 5.10
100 0 0
SUBBASIN 070, Aguila/Carefree, Acres, 1.0000
SOILS
6, 112.000, 22.0, 0.62, 0
33, 29.000, 5.7, 0.23, 0
61, 8.000, 1.6, 0.15, 0
90, 28.000, 5.5, 0.39, 0
93, 18.000, 3.5, 0.33, 0
96, 70.000, 13.8, 0.07, 0
122, 243.000, 47.8, 0.33, 0
SOIL TOTALS
508.000 0.30 0 100
LAND USE
Desert10, 457.000, 90.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, 51.000, 10.0, NORMAL, 30, 5, 0.30, 0.050, Low, 0.06,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
508.00 12 3 0.17 0.036 0.043 -0.013750 0.080
MCUHP 070, 0.794 0.17 0.34 3 4.50 0.31 0.036 0.043
0.35 0.25 0.00 4.50
90 10 0
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E3102-6.M1O                          Name of output file
DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 6 hr storm
1                                    1=single storm, 2=multiple storm
14.06                                storm size (sq. miles)
1                                    rain: 1=6hr, 2=2hr, 3=24hr, 4=manual
3.45                                 point rainfall depth
005                        <*****    basin name *************************
0.417                                basin area (square miles)
2.10                                 flow path length (miles)
0.047                                basin roughness - Kb
130.0        HE=3140.0               basin slope (ft./mile)
1           LE=2866.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 3.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
010                        <*****    basin name *************************
0.336                                basin area (square miles)
1.93                                 flow path length (miles)
0.048                                basin roughness - Kb
146.0        HE=3130.0               basin slope (ft./mile)
1           LE=2848.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 3.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
012                        <*****    basin name *************************
0.297                                basin area (square miles)
1.68                                 flow path length (miles)
0.049                                basin roughness - Kb
117.0        HE=2970.0               basin slope (ft./mile)
1           LE=2774.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 5.20 0.220 3.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
015                        <*****    basin name *************************
1.268                                basin area (square miles)
2.54                                 flow path length (miles)
0.040                                basin roughness - Kb
108.0        HE=2960.0               basin slope (ft./mile)
1           LE=2686.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 3.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
017                        <*****    basin name *************************
0.216                                basin area (square miles)
1.34                                 flow path length (miles)
0.051                                basin roughness - Kb
113.0        HE=2755.0               basin slope (ft./mile)
1           LE=2604.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 5.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
020                        <*****    basin name *************************
0.761                                basin area (square miles)
1.74                                 flow path length (miles)
0.043                                basin roughness - Kb
199.0        HE=3020.0               basin slope (ft./mile)
1           LE=2673.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 12.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
022                        <*****    basin name *************************
0.381                                basin area (square miles)
2.71                                 flow path length (miles)
0.047                                basin roughness - Kb
128.0        HE=2952.0               basin slope (ft./mile)
1           LE=2604.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 6.80 0.120 8.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
024                        <*****    basin name *************************
1.020                                basin area (square miles)
1.35                                 flow path length (miles)
0.041                                basin roughness - Kb
294.0        HE=3237.0               basin slope (ft./mile)
1           LE=2704.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 12.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
026                        <*****    basin name *************************
0.269                                basin area (square miles)
2.41                                 flow path length (miles)
0.049                                basin roughness - Kb
249.8        HE=3250.0               basin slope (ft./mile)
1           LE=2604.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 7.00 0.110 24.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
030                        <*****    basin name *************************
0.355                                basin area (square miles)
2.38                                 flow path length (miles)
0.048                                basin roughness - Kb
100.0        HE=2821.0               basin slope (ft./mile)
1           LE=2582.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.70 0.180 8.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                    UA-record: 1=urban, 2=natural, 3=manual input
1                                    Continue? 1 = next subbasin, 2 = stop
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032                          <*****  basin name *************************
0.033                                 basin area (square miles)
0.40                                  flow path length (miles)
0.062                                 basin roughness - Kb
100.0        HE=2598.0                basin slope (ft./mile)
1           LE=2558.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.55 0.310 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
034                          <*****  basin name *************************
0.298                                 basin area (square miles)
1.32                                  flow path length (miles)
0.049                                 basin roughness - Kb
97.0         HE=2804.0                basin slope (ft./mile)
1           LE=2676.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 16.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
036                          <*****  basin name *************************
0.250                                 basin area (square miles)
1.37                                  flow path length (miles)
0.050                                 basin roughness - Kb
278.2        HE=3054.0                basin slope (ft./mile)
1           LE=2570.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 7.00 0.110 19.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
038                          <*****  basin name *************************
0.183                                 basin area (square miles)
1.27                                  flow path length (miles)
0.052                                 basin roughness - Kb
303.0        HE=3198.0                basin slope (ft./mile)
1           LE=2558.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 6.60 0.130 16.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
040                          <*****  basin name *************************
0.328                                 basin area (square miles)
1.56                                  flow path length (miles)
0.048                                 basin roughness - Kb
245.0        HE=2896.0                basin slope (ft./mile)
1           LE=2490.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 5.60 0.190 5.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
041                          <*****  basin name *************************
0.064                                 basin area (square miles)
0.69                                  flow path length (miles)
0.058                                 basin roughness - Kb
133.0        HE=2544.0                basin slope (ft./mile)
1           LE=2452.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.80 0.260 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
042                          <*****  basin name *************************
0.325                                 basin area (square miles)
1.51                                  flow path length (miles)
0.048                                 basin roughness - Kb
296.4        HE=3054.0                basin slope (ft./mile)
1           LE=2452.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 8.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
043                          <*****  basin name *************************
0.286                                 basin area (square miles)
1.92                                  flow path length (miles)
0.049                                 basin roughness - Kb
99.0         HE=2512.0                basin slope (ft./mile)
1           LE=2322.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.65 0.290 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
044                          <*****  basin name *************************
1.400                                 basin area (square miles)
2.99                                  flow path length (miles)
0.039                                 basin roughness - Kb
240.0        HE=3054.0                basin slope (ft./mile)
1           LE=2306.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 5.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
046                          <*****  basin name *************************
0.111                                 basin area (square miles)
0.67                                  flow path length (miles)
0.055                                 basin roughness - Kb
101.0        HE=2346.0                basin slope (ft./mile)
1           LE=2278.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 5.10 0.230 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
048                          <*****  basin name *************************
0.056                                 basin area (square miles)
0.43                                  flow path length (miles)
0.059                                 basin roughness - Kb
112.0        HE=2300.0                basin slope (ft./mile)
1           LE=2252.0                 loss method: 1=Green-Ampt, 2 = init & uniform
```

```
0.150 0.350 4.90 0.250 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
051                         <*****  basin name *************************
0.164                               basin area (square miles)
1.41                                flow path length (miles)
0.052                               basin roughness - Kb
128.0        HE=2432.0              basin slope (ft./mile)
1           LE=2252.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
053                         <*****  basin name *************************
0.094                               basin area (square miles)
0.66                                flow path length (miles)
0.056                               basin roughness - Kb
126.0        HE=2313.0              basin slope (ft./mile)
1           LE=2230.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 6.60 0.130 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
055                         <*****  basin name *************************
0.366                               basin area (square miles)
2.43                                flow path length (miles)
0.047                               basin roughness - Kb
125.0        HE=2516.0              basin slope (ft./mile)
1           LE=2213.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
058                         <*****  basin name *************************
1.756                               basin area (square miles)
2.86                                flow path length (miles)
0.038                               basin roughness - Kb
120.0        HE=2808.0              basin slope (ft./mile)
1           LE=2464.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 4.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
060                         <*****  basin name *************************
0.778                               basin area (square miles)
3.39                                flow path length (miles)
0.043                               basin roughness - Kb
152.0        HE=2846.0              basin slope (ft./mile)
1           LE=2330.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.140 6.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
062                         <*****  basin name *************************
0.730                               basin area (square miles)
2.26                                flow path length (miles)
0.043                               basin roughness - Kb
158.0        HE=2680.0              basin slope (ft./mile)
1           LE=2324.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.150 8.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
064                         <*****  basin name *************************
0.473                               basin area (square miles)
1.80                                flow path length (miles)
0.046                               basin roughness - Kb
149.0        HE=2555.0              basin slope (ft./mile)
1           LE=2287.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
066                         <*****  basin name *************************
0.006                               basin area (square miles)
0.18                                flow path length (miles)
0.072                               basin roughness - Kb
122.0        HE=2287.0              basin slope (ft./mile)
1           LE=2265.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.20 0.360 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
068                         <*****  basin name *************************
0.248                               basin area (square miles)
1.05                                flow path length (miles)
0.050                               basin roughness - Kb
133.0        HE=2324.0              basin slope (ft./mile)
1           LE=2184.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 5.10 0.220 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
070                         <*****  basin name *************************
0.794                               basin area (square miles)
2.68                                flow path length (miles)
0.043                               basin roughness - Kb
131.0        HE=2385.0              basin slope (ft./mile)
1           LE=2035.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.170 0.340 4.50 0.310 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
2                                   Continue? 1 = next subbasin, 2 = stop
```

```
ID DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 6 hr storm
ID
IT     5                    300
IO     3
KK
KM SUB-BASIN 005
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.10  Kb = .047  Adj. Slope =  130.0
BA  .417
IN    15
KM RAINFALL DEPTH OF 3.45 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
PB 3.201
KM THE FOLLOWING PC RECORD USED A 6-HOUR STORM WITH A PATTERN No. OF 2.93
PC  .000    .015    .020    .030    .047    .061    .074    .088    .102    .116
PC  .131    .148    .171    .218    .300    .470    .672    .799    .870    .914
PC  .946    .960    .973    .987   1.000
LG  .150    .390   6.200    .150   3.000
UC  .608    .635
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 010
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.93  Kb = .048  Adj. Slope =  146.0
BA  .336
LG  .150    .390   5.800    .170   3.000
UC  .567    .621
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 012
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.68  Kb = .049  Adj. Slope =  117.0
BA  .297
LG  .150    .370   5.200    .220   3.000
UC  .583    .615
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 015
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.54  Kb = .040  Adj. Slope =  108.0
BA 1.268
LG  .150    .390   5.800    .170   3.000
UC  .663    .431
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 017
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.34  Kb = .051  Adj. Slope =  113.0
BA  .216
LG  .150    .390   6.200    .150   5.000
UC  .517    .538
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 020
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.74  Kb = .043  Adj. Slope =  199.0
BA  .761
LG  .150    .380   6.400    .140  12.000
UC  .442    .272
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 022
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.71  Kb = .047  Adj. Slope =  128.0
BA  .381
LG  .150    .360   6.800    .120   8.000
UC  .688    .939
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 024
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.35  Kb = .041  Adj. Slope =  294.0
BA 1.020
LG  .150    .380   6.400    .140  12.000
UC  .329    .135
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 026
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.41  Kb = .049  Adj. Slope =  249.8
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BA  .269
LG  .150    .350   7.000    .110  24.000
UC  .508    .746
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 030
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.38  Kb = .048  Adj. Slope =  100.0
BA  .355
LG  .150    .390   5.700    .180   8.000
UC  .729    .941
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 032
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .40  Kb = .062  Adj. Slope =  100.0
BA  .033
LG  .150    .350   4.550    .310   3.000
UC  .329    .362
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 034
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.32  Kb = .049  Adj. Slope =   97.0
BA  .298
LG  .150    .380   6.400    .140  16.000
UC  .517    .443
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 036
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.37  Kb = .050  Adj. Slope =  278.2
BA  .250
LG  .150    .350   7.000    .110  19.000
UC  .371    .349
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 038
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.27  Kb = .052  Adj. Slope =  303.0
BA  .183
LG  .150    .370   6.600    .130  16.000
UC  .358    .377
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 040
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.56  Kb = .048  Adj. Slope =  245.0
BA  .328
LG  .150    .380   5.600    .190   5.000
UC  .425    .386
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 041
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .69  Kb = .058  Adj. Slope =  133.0
BA  .064
LG  .150    .350   4.800    .260   3.000
UC  .383    .454
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 042
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.51  Kb = .048  Adj. Slope =  296.4
BA  .325
LG  .150    .400   6.000    .160   8.000
UC  .387    .341
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 043
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.92  Kb = .049  Adj. Slope =   99.0
BA  .286
LG  .150    .350   4.650    .290   3.000
UC  .688    .840
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
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KM SUB-BASIN 044
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.99  Kb = .039  Adj. Slope =  240.0
BA 1.400
LG  .150    .390   5.800    .170   5.000
UC  .538    .368
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 046
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .67  Kb = .055  Adj. Slope =  101.0
BA  .111
LG  .150    .360   5.100    .230   3.000
UC  .396    .336
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 048
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .43  Kb = .059  Adj. Slope =  112.0
BA  .056
LG  .150    .350   4.900    .250   3.000
UC  .317    .272
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 051
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.41  Kb = .052  Adj. Slope =  128.0
BA  .164
LG  .150    .390   6.200    .150   3.000
UC  .517    .656
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 053
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .66  Kb = .056  Adj. Slope =  126.0
BA  .094
LG  .150    .370   6.600    .130   3.000
UC  .358    .327
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 055
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.43  Kb = .047  Adj. Slope =  125.0
BA  .366
LG  .150    .400   6.000    .160   5.000
UC  .671    .857
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 058
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.86  Kb = .038  Adj. Slope =  120.0
BA 1.756
LG  .150    .400   6.000    .160   4.000
UC  .663    .394
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 060
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 3.39  Kb = .043  Adj. Slope =  152.0
BA  .778
LG  .150    .390   6.200    .140   6.000
UC  .708    .773
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 062
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.26  Kb = .043  Adj. Slope =  158.0
BA  .730
LG  .150    .400   6.000    .150   8.000
UC  .558    .445
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 064
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.80  Kb = .046  Adj. Slope =  149.0
BA  .473
LG  .150    .390   6.200    .150   5.000
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UC  .521    .440
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 066
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .18  Kb = .072  Adj. Slope =  122.0
BA  .006
LG  .150    .350   4.200    .360   3.000
UC  .225    .331
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 068
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.05  Kb = .050  Adj. Slope =  133.0
BA  .248
LG  .150    .360   5.100    .220   3.000
UC  .433    .337
UA    0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 070
KM 6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.68  Kb = .043  Adj. Slope =  131.0
BA  .794
LG  .170    .340   4.500    .310   3.000
UC  .704    .629
UA    0       3       5       8      12      20      43      75      90      96
UA   100
ZZ
```

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1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUL   1997               *
 *           VERSION 4.1                 *
 *                                       *
 *  RUN DATE   20OCT99  TIME  12:30:52   *
 *                                       *
*****************************************
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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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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

HEC-1 INPUT PAGE 1

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

  1           ID   DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 6 hr storm
              * ******************************************************************************
              *                                                                              *
              *                 Flood Control District of Maricopa County                    *
              *              Upper Rawhide Wash Floodplain Delineation Study                 *
              *                                FCD98-12                                      *
              *                                                                              *
              *                        EXISTING CONDITIONS HYDROLOGY                         *
              *                                                                              *
              *                          100 yr, 6 hr storm event                            *
              *                  Prepared by Kimley-Horn and Associates, Inc.                *
              *                            KHA Job No. 091131.02                             *
              *                                                                              *
              *                                 October 1999                                 *
              *                                                                              *
              *                                                                              *
              *  This hydrology represents conditions of the Upper Rawhide Wash and its      *
              *  tributaries in existing conditions.                                         *
              *                                                                              *
              *  There are two existing flow splits at CP062 and CP066, they will be cut off *
              *  and routed 100% to the dam site as part of the dam project.  This model     *
              *  accounts for the proposed diversion works with Rawhide Wash Dam.            *
              *                                                                              *
              *  Input parameters for the model were determined using the Flood Control      *
              *  District of Maricopa County's (FCDMC) Drainage Design Menu System (DDMS).   *
              *                                                                              *
              *  The values entered into DDMS were based on the following:                   *
              *                                                                              *
              *       Rainfall depths   Point precipitation values were determined using     *
              *                         the isopluvial maps in the FCDMC Hydrology Manual    *
              *                                                                              *
              *       Rainfall excess   The Green and Ampt Methodology was used for          *
              *                         estimation of rainfall losses.  Digital soil         *
              *                         maps for the City of Scottsdale were used to         *
              *                         determine soil distributions.                        *
              *                                                                              *
              *                         Existing land use conditions were determined from    *
              *                         the City of Scottsdale General Plan digital          *
              *                         zoning map and aerial photos.                        *
              *                                                                              *
              *       Unit hydrographs  The Clark Unit Hydrograph methodology was applied.   *
              *                         City of Scottsdale digital topographic mapping       *
              *                         with 1' and 2' contour intervals was used.           *
              *                                                                              *
              *       Routing           Normal Depth Channel Routing was used with 8 point   *
              *                         cross sections approximated from the BOSS River      *
              *                         Modeling System.                                     *
              *                                                                              *
              * ******************************************************************************
              *
              *DIAGRAM
  2           IT       2                    750
  3           IO       5
  4           IN      15
              * DDM   ***** Preserved *****
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HEC-1 INPUT PAGE 2

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 5          KK     005
 6          KM   SUB-BASIN 005
 7          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 8          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 9          KM     L = 2.10  Kb = .047  Adj. Slope =  130.0
10          BA    .417
11          IN      15
12          KM   RAINFALL DEPTH OF 3.45 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
13          PB   3.201
14          KM   THE FOLLOWING PC RECORD USED A 6-HOUR STORM WITH A PATTERN No. OF 2.93
15          PC    .000    .015    .020    .030    .047    .061    .074    .088    .102    .116
16          PC    .131    .148    .171    .218    .300    .470    .672    .799    .870    .914
17          PC    .946    .960    .973    .987   1.000
18          LG    .150    .390   6.200    .150   3.000
19          UC    .608    .635
20          UA       0       3       5       8      12      20      43      75      90      96
21          UA     100
            * DDM   ***** Preserved *****

22          KK  R010-1
23          KM   Route the runoff hydrograph from CP005 to CP010
24          RS       1    FLOW      -1
25          RC   0.045   0.035   0.045     884   0.024
26          RX       0      40     156     172     201     253     546     571
27          RY    2870    2868    2868    2866    2866    2868    2868    2870
            * DDM   ***** Preserved *****

28          KK     010
29          KM   SUB-BASIN 010
30          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
31          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
32          KM     L = 1.93  Kb = .048  Adj. Slope =  146.0
33          BA    .336
34          LG    .150    .390   5.800    .170   3.000
35          UC    .567    .621
36          UA       0       3       5       8      12      20      43      75      90      96
37          UA     100
            * DDM   ***** Preserved *****

38          KK   CP010
39          KM   Combine routed hydrograph from 005 and runoff hydrograph from 010
40          HC       2
            * DDM   ***** Preserved *****

41          KK  R012-1
42          KM   Route the combined hydrograph from CP010 to CP012
43          RS       6    FLOW      -1
44          RC   0.045   0.035   0.045    3716   0.019
45          RX     261     486     555     684     700     716     743     778
46          RY    2794    2792    2792    2790    2788    2790    2792    2794
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

47          KK     012
48          KM   SUB-BASIN 012
49          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
50          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
51          KM     L = 1.68  Kb = .049  Adj. Slope =  117.0
52          BA    .297
53          LG    .150    .370   5.200    .220   3.000
54          UC    .583    .615
55          UA       0       3       5       8      12      20      43      75      90      96
56          UA     100
            * DDM   ***** Preserved *****

57          KK   CP012
58          KM   Combine runoff hydrograph from 012 with routed hydrograph from CP010
59          HC       2
            * DDM   ***** Preserved *****

60          KK    D012
61          KM   Divert flow away from main Rawhide Wash to the West.
62          DT  012OUT
63          DI       0      43     152     330     586     929    1365
64          DQ       0      10      43     105     203     344     533
            * DDM   ***** Preserved *****

65          KK  R030-1
66          KM   Route the combined hydrograph from CP012 to CP030A.
67          RS      29    FLOW      -1
68          RC   0.045   0.035   0.045   10780   0.018
69          RX     428     497     753     780     835     868     897     992
70          RY    2684    2680    2680    2682    2682    2680    2680    2684
            * DDM   ***** Preserved *****

71          KK     030
72          KM   SUB-BASIN 030
73          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
74          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
75          KM     L = 2.38  Kb = .048  Adj. Slope =  100.0
76          BA    .355
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 77          LG    .150    .390   5.700    .180   8.000
 78          UC    .729    .941
 79          UA       0       3       5       8      12      20      43      75      90      96
 80          UA     100
             * DDM   ***** Preserved *****

 81          KK  CP030A
 82          KM   Combine routed hydrographs from CP012 with runoff hydrographs from 030.
 83          KM   This combination was made for use in the hydraulic modeling of a
 84          KM   tributary to Rawhide Wash.
 85          HC       2
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                                PAGE  4
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 86          KK     015
 87          KM   SUB-BASIN 015
 88          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 89          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 90          KM     L = 2.54  Kb = .040  Adj. Slope =  108.0
 91          BA   1.268
 92          LG    .150    .390   5.800    .170   3.000
 93          UC    .663    .431
 94          UA       0       3       5       8      12      20      43      75      90      96
 95          UA     100
             * DDM   ***** Preserved *****

 96          KK  R022-1
 97          KM   Route the runoff hydrograph from 015 to CP022A.
 98          RS       7    FLOW      -1
 99          RC   0.045   0.035   0.045    4466   0.018
100          RX    9714    9798    9905    9943   10002   10037   10299   10412
101          RY    2740    2734    2734    2728    2726    2728    2730    2740
             * DDM   ***** Preserved *****

102          KK     017
103          KM   SUB-BASIN 017
104          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
105          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
106          KM     L = 1.34  Kb = .051  Adj. Slope =  113.0
107          BA    .216
108          LG    .150    .390   6.200    .150   5.000
109          UC    .517    .538
110          UA       0       3       5       8      12      20      43      75      90      96
111          UA     100
             * DDM   ***** Preserved *****

112          KK  CP022A
113          KM   Combine routed hydrographs from CP015 with runoff hydrographs from 017.
114          KM   This combination was made for use in the hydraulic modeling of a
115          KM   tributary to Rawhide Wash.
116          HC       2
             * DDM   ***** Preserved *****

117          KK     020
118          KM   SUB-BASIN 020
119          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
120          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
121          KM     L = 1.74  Kb = .043  Adj. Slope =  199.0
122          BA    .761
123          LG    .150    .380   6.400    .140  12.000
124          UC    .442    .272
125          UA       0       3       5       8      12      20      43      75      90      96
126          UA     100
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                                PAGE  5
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

127          KK  R022-2
128          KM   Route the runoff hydrograph from 020 to CP022B.
129          RS       7    FLOW      -1
130          RC   0.045   0.035   0.045    4146   0.017
131          RX    9805    9902   10081   10090   10098   10102   10253   10264
132          RY    2690    2686    2688    2686    2686    2688    2688    2690
             * DDM   ***** Preserved *****

133          KK     022
134          KM   SUB-BASIN 022
135          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
136          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
137          KM     L = 2.71  Kb = .047  Adj. Slope =  128.0
138          BA    .381
139          LG    .150    .360   6.800    .120   8.000
140          UC    .688    .939
141          UA       0       3       5       8      12      20      43      75      90      96
142          UA     100
             * DDM   ***** Preserved *****

143          KK  CP022B
144          KM   Combine routed hydrographs from CP020 with runoff hydrographs from 022.
145          KM   This combination was made for use in the hydraulic modeling of a
146          KM   tributary to Rawhide Wash.
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147          HC       2
             * DDM   ***** Preserved *****

148          KK   CP022
149          KM   Combine hydrographs from CP022A and CP022B.
150          KM   This combination was made for use in the hydraulic modeling of a
151          KM   tributary to Rawhide Wash.
152          HC       2
             * DDM   ***** Preserved *****

153          KK     024
154          KM   SUB-BASIN 024
155          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
156          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
157          KM     L = 1.35  Kb = .041  Adj. Slope =  294.0
158          BA   1.020
159          LG    .150    .380   6.400    .140  12.000
160          UC    .329    .135
161          UA       0       3       5       8      12      20      43      75      90      96
162          UA     100
             * DDM   ***** Preserved *****

163          KK  R026-1
164          KM   Route the runoff hydrograph from 024 to CP026A.
165          RS       6    FLOW      -1
166          RC   0.045   0.035   0.045    6097   0.016
167          RX    9712    9782    9851    9931    9950   10050   10176   10237
168          RY    2700    2692    2688    2688    2686    2686    2696    2700
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE  6

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

169          KK     026
170          KM   SUB-BASIN 026
171          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
172          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
173          KM     L = 2.41  Kb = .049  Adj. Slope =  249.8
174          BA    .269
175          LG    .150    .350   7.000    .110  24.000
176          UC    .508    .746
177          UA       0       3       5       8      12      20      43      75      90      96
178          UA     100
             * DDM   ***** Preserved *****

179          KK  CP026A
180          KM   Combine routed hydrographs from 024 with runoff hydrographs from 026.
181          KM   This combination was made for use in the hydraulic modeling of a
182          KM   tributary to Rawhide Wash.
183          HC       2
             * DDM   ***** Preserved *****

184          KK   CP026
185          KM   Combine hydrograph from CP022 with hydrograph from CP026A.
186          HC       2
             * DDM   ***** Preserved *****

187          KK  R030-2
188          KM   Route the combined hydrograph from CP026 to CP030
189          RS       2    FLOW      -1
190          RC   0.045   0.035   0.045    1354   0.016
191          RX     214     314     479     518     654     771     852     939
192          RY    2604    2598    2598    2596    2596    2594    2594    2604
             * DDM   ***** Preserved *****

193          KK   CP030
194          KM   Combine routed hydrographs from CP026 and CP030A.
195          KM   This combination was made for use in the hydraulic modeling of a
196          KM   tributary to Rawhide Wash.
197          HC       2
             * DDM   ***** Preserved *****

198          KK  R038-1
199          KM   Route combined hydrograph from CP030 to CP038
200          RS       2    FLOW      -1
201          RC   0.045   0.035   0.045    1605   0.012
202          RX     290     378     536     538     607     650     727     753
203          RY    2582    2576    2574    2572    2572    2580    2580    2582
             * DDM   ***** Preserved *****

204          KK     034
205          KM   SUB-BASIN 034
206          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
207          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
208          KM     L = 1.32  Kb = .049  Adj. Slope =   97.0
209          BA    .298
210          LG    .150    .380   6.400    .140  16.000
                                     HEC-1 INPUT                                          PAGE  7

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

211          UC    .517    .443
212          UA       0       3       5       8      12      20      43      75      90      96
213          UA     100
             * DDM   ***** Preserved *****
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214          KK  R036-1
215          KM   Route runoff hydrograph from 034 to CP036
216          RS       9    FLOW      -1
217          RC   0.045   0.035   0.045    5295   0.019
218          RX    9725    9842    9891    9970   10030   10032   10143   10241
219          RY    2652    2646    2646    2642    2642    2644    2644    2652
             * DDM   ***** Preserved *****

220          KK     036
221          KM   SUB-BASIN 036
222          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
223          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
224          KM     L = 1.37  Kb = .050  Adj. Slope =  278.2
225          BA    .250
226          LG    .150    .350   7.000    .110  19.000
227          UC    .371    .349
228          UA       0       3       5       8      12      20      43      75      90      96
229          UA     100
             * DDM   ***** Preserved *****

230          KK   CP036
231          KM   Combine routed hydrograph from 034 with runoff hydrograph from 036
232          HC       2
             * DDM   ***** Preserved *****

233          KK  R038-2
234          KM   Route combined hydrograph from CP036 to CP038A.
235          RS       1    FLOW      -1
236          RC   0.045   0.035   0.045     483   0.025
237          RX    9837    9891    9971    9988   10012   10126   10148   10177
238          RY    2578    2574    2574    2572    2572    2574    2576    2578
             * DDM   ***** Preserved *****

239          KK     038
240          KM   SUB-BASIN 038
241          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
242          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
243          KM     L = 1.27  Kb = .052  Adj. Slope =  303.0
244          BA    .183
245          LG    .150    .370   6.600    .130  16.000
246          UC    .358    .377
247          UA       0       3       5       8      12      20      43      75      90      96
248          UA     100
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

249          KK  CP038A
250          KM   Combine routed hydrographs from CP036 with runoff hydrograph from 038.
251          KM   This combination was made for use in the hydraulic modeling of a
252          KM   tributary to Rawhide Wash.
253          HC       2
             * DDM   ***** Preserved *****

254          KK     032
255          KM   SUB-BASIN 032
256          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
257          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
258          KM     L =  .40  Kb = .062  Adj. Slope =  100.0
259          BA    .033
260          LG    .150    .350   4.550    .310   3.000
261          UC    .329    .362
262          UA       0       3       5       8      12      20      43      75      90      96
263          UA     100
             * DDM   ***** Preserved *****

264          KK   CP038
265          KM   Combine hydrograph from CP030A and CP036 with runoff hydrographs from 032.
266          KM   This combination was made for use in the hydraulic modeling of a
267          KM   tributary to Rawhide Wash.
268          HC       3
             * DDM   ***** Preserved *****

269          KK  R040-1
270          KM   Route combined hydrograph from CP038 to CP040
271          RS       4    FLOW      -1
272          RC   0.045   0.035   0.045    3775   0.019
273          RX      47      75     224     433     448     523     609     678
274          RY    2540    2536    2530    2530    2528    2528    2534    2540
             * DDM   ***** Preserved *****

275          KK     040
276          KM   SUB-BASIN 040
277          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
278          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
279          KM     L = 1.56  Kb = .048  Adj. Slope =  245.0
280          BA    .328
281          LG    .150    .380   5.600    .190   5.000
282          UC    .425    .386
283          UA       0       3       5       8      12      20      43      75      90      96
284          UA     100
             * DDM   ***** Preserved *****
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 285          KK   CP040
 286          KM   Combine routed hydrographs from CP038 with runoff hydrograph from 040
 287          HC       2
              * DDM   ***** Preserved *****
                                   HEC-1 INPUT                                          PAGE  9

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


 288          KK  R042-1
 289          KM   Route combined hydrograph from CP040 to CP042
 290          RS       2    FLOW      -1
 291          RC   0.045   0.035   0.045    2074   0.018
 292          RX     263     349     381     450     522     756     847     973
 293          RY    2486    2482    2476    2482    2476    2476    2482    2486
              *
              * DDM   ***** Preserved *****

 294          KK     041
 295          KM   SUB-BASIN 041
 296          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 297          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 298          KM     L =  .69  Kb = .058  Adj. Slope =  133.0
 299          BA    .064
 300          LG    .150    .350   4.800    .260   3.000
 301          UC    .383    .454
 302          UA       0       3       5       8      12      20      43      75      90      96
 303          UA     100
              * DDM   ***** Preserved *****

 304          KK     042
 305          KM   SUB-BASIN 042
 306          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 307          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 308          KM     L = 1.51  Kb = .048  Adj. Slope =  296.4
 309          BA    .325
 310          LG    .150    .400   6.000    .160   8.000
 311          UC    .387    .341
 312          UA       0       3       5       8      12      20      43      75      90      96
 313          UA     100
              * DDM   ***** Preserved *****

 314          KK   CP042
 315          KM   Combine routed hydrograph from CP040 with runoff hydrographs from 041 & 042
 316          HC       3
              * DDM   ***** Preserved *****

 317          KK  R043-1
 318          KM   Route combined hydrograph from CP040 to CP042
 319          RS       8    FLOW      -1
 320          RC   0.045   0.035   0.045    7504   0.017
 321          RX     263     349     381     450     522     756     847     973
 322          RY    2486    2482    2476    2482    2476    2476    2482    2486
              * DDM   ***** Preserved *****

 323          KK     043
 324          KM   SUB-BASIN 043
 325          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 326          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 327          KM     L = 1.92  Kb = .049  Adj. Slope =   99.0
 328          BA    .286
 329          LG    .150    .350   4.650    .290   3.000
 330          UC    .688    .840
                                   HEC-1 INPUT                                          PAGE 10

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

 331          UA       0       3       5       8      12      20      43      75      90      96
 332          UA     100
              * DDM   ***** Preserved *****

 333          KK   CP043
 334          KM   Combine routed hydrograph from CP042 with runoff hydrograph from 043
 335          HC       2
              * DDM   ***** Preserved *****

 336          KK  R046-1
 337          KM   Route combined hydrograph from CP043 to CP046
 338          RS       4    FLOW      -1
 339          RC   0.045   0.035   0.045    2845   0.015
 340          RX    9425    9601    9923    9945   10019   10043   10267   10435
 341          RY    2300    2288    2288    2286    2286    2288    2288    2302
              * DDM   ***** Preserved *****

 342          KK     044
 343          KM   SUB-BASIN 044
 344          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 345          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 346          KM     L = 2.99  Kb = .039  Adj. Slope =  240.0
 347          BA   1.400
 348          LG    .150    .390   5.800    .170   5.000
 349          UC    .538    .368
 350          UA       0       3       5       8      12      20      43      75      90      96
 351          UA     100
              * DDM   ***** Preserved *****
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352          KK  R046-2
353          KM   Route runoff hydrograph from 044 to CP046
354          RS       5    FLOW      -1
355          RC   0.045   0.035   0.045    1882   0.016
356          RX    9425    9601    9923    9945   10019   10043   10267   10435
357          RY    2300    2288    2288    2286    2286    2288    2288    2302
             * DDM   ***** Preserved *****

358          KK     046
359          KM   SUB-BASIN 046
360          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
361          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
362          KM     L =  .67  Kb = .055  Adj. Slope =  101.0
363          BA    .111
364          LG    .150    .360   5.100    .230   3.000
365          UC    .396    .336
366          UA       0       3       5       8      12      20      43      75      90      96
367          UA     100
             * DDM   ***** Preserved *****

368          KK   CP046
369          KM   Combine routed hydrographs from CP042 and 044 with runoff hydrograph from
370          KM   046
371          HC       3
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 11

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

372          KK  R051-1
373          KM   Route combined hydrograph from CP046 to CP051
374          RS       2    FLOW      -1
375          RC   0.045   0.035   0.045    1557   0.017
376          RX    9822    9952    9976    9977   10023   10046   10356   10509
377          RY    2275    2261    2262    2260    2260    2263    2264    2275
             * DDM   ***** Preserved *****

378          KK     048
379          KM   SUB-BASIN 048
380          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
381          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
382          KM     L =  .43  Kb = .059  Adj. Slope =  112.0
383          BA    .056
384          LG    .150    .350   4.900    .250   3.000
385          UC    .317    .272
386          UA       0       3       5       8      12      20      43      75      90      96
387          UA     100
             * DDM   ***** Preserved *****

388          KK     051
389          KM   SUB-BASIN 051
390          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
391          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
392          KM     L = 1.41  Kb = .052  Adj. Slope =  128.0
393          BA    .164
394          LG    .150    .390   6.200    .150   3.000
395          UC    .517    .656
396          UA       0       3       5       8      12      20      43      75      90      96
397          UA     100
             * DDM   ***** Preserved *****

398          KK   CP051
399          KM   Combine routed hydrograph from CP046 with runoff hydrographs from 048 and 051
400          HC       3
             * DDM   ***** Preserved *****

401          KK  R053-1
402          KM   Route combined hydrograph from CP051 to CP053
403          RS       1    FLOW      -1
404          RC   0.045   0.035   0.045    1681   0.030
405          RX    9910    9935    9963    9987   10041   10046   10075   10085
406          RY    2249    2245    2245    2238    2238    2239    2239    2242
             * DDM   ***** Preserved *****

407          KK     053
408          KM   SUB-BASIN 053
409          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
410          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
411          KM     L =  .66  Kb = .056  Adj. Slope =  126.0
412          BA    .094
413          LG    .150    .370   6.600    .130   3.000
414          UC    .358    .327
415          UA       0       3       5       8      12      20      43      75      90      96
1                                    HEC-1 INPUT                                          PAGE 12

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

416          UA     100
             * DDM   ***** Preserved *****

417          KK   CP053
418          KM   Combine routed hydrographs from CP051 with runoff hydrograph from 053
419          HC       2
             * DDM   ***** Preserved *****
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```
420          KK  R055-1
421          KM   Route combined hydrograph from CP053 to CP055
422          RS       1    FLOW      -1
423          RC   0.045   0.035   0.045     784   0.019
424          RX     111     154     304     389     510     725     836     937
425          RY    2208    2202    2200    2197    2199    2200    2199    2208
             * DDM   ***** Preserved *****

426          KK     055
427          KM   SUB-BASIN 055
428          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
429          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
430          KM     L = 2.43  Kb = .047  Adj. Slope =  125.0
431          BA    .366
432          LG    .150    .400   6.000    .160   5.000
433          UC    .671    .857
434          UA       0       3       5       8      12      20      43      75      90      96
435          UA     100
             * DDM   ***** Preserved *****

436          KK   CP055
437          KM   Combine routed hydrograph from CP053 with runoff hydrograph from 055
438          HC       2
             * DDM   ***** Preserved *****

439          KK  R068-1
440          KM   Route combined hydrograph from CP055 to CP068
441          RS       2    FLOW      -1
442          RC   0.045   0.035   0.045    1728   0.017
443          RX     111     154     304     389     510     725     836     937
444          RY    2208    2202    2200    2197    2197    2200    2199    2208
             * DDM   ***** Preserved *****

445          KK     058
446          KM   SUB-BASIN 058
447          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
448          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
449          KM     L = 2.86  Kb = .038  Adj. Slope =  120.0
450          BA   1.756
451          LG    .150    .400   6.000    .160   4.000
452          UC    .663    .394
453          UA       0       3       5       8      12      20      43      75      90      96
454          UA     100
             * DDM   ***** Preserved *****
                                    HEC-1 INPUT                                          PAGE 13

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

455          KK  R064-1
456          KM   Route runoff hydrograph from 058
457          RS       8    FLOW      -1
458          RC   0.045   0.035   0.045    7694   0.023
459          RX       0      76     102     111     117     118     168     205
460          RY    2323    2321    2319    2319    2320    2321    2323    2325
             * DDM   ***** Preserved *****

461          KK     060
462          KM   SUB-BASIN 060
463          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
464          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
465          KM     L = 3.39  Kb = .043  Adj. Slope =  152.0
466          BA    .778
467          LG    .150    .390   6.200    .140   6.000
468          UC    .708    .773
469          UA       0       3       5       8      12      20      43      75      90      96
470          UA     100
             * DDM   ***** Preserved *****

471          KK  R062-1
472          KM   Route runoff hydrograph from 060
473          RS       1    FLOW      -1
474          RC   0.045   0.035   0.045     441   0.018
475          RX       0      20      38      41      45      60      94     128
476          RY  2328.5    2328    2327    2327    2326    2326    2327  2328.5
             * DDM   ***** Preserved *****

477          KK     062
478          KM   SUB-BASIN 062
479          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
480          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
481          KM     L = 2.26  Kb = .043  Adj. Slope =  158.0
482          BA    .730
483          LG    .150    .400   6.000    .150   8.000
484          UC    .558    .445
485          UA       0       3       5       8      12      20      43      75      90      96
486          UA     100
             * DDM   ***** Preserved *****

487          KK   CP062
488          KM   Combine routed hydrograph from 060 with runoff hydrograph from 062
489          HC       2
             *
             * Currently flow splits at this location.  With the Rawhide Wash Dam project
             * these flows will be cut off and routed to the dam site.  The routing in this
             * model indicates this.
```

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                *
                * DDM   ***** Preserved *****
1                                   HEC-1 INPUT                                                    PAGE 14

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

 490            KK  R064-2
 491            KM   Route combined hydrograph from CP062
 492            RS       2    FLOW      -1
 493            RC   0.045   0.035   0.045    1554   0.024
 494            RX       0      17      23      73      83      90      99     107
 495            RY    2316    2316    2315    2315    2316    2317    2318    2319
                * DDM   ***** Preserved *****

 496            KK     064
 497            KM   SUB-BASIN 064
 498            KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 499            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 500            KM     L = 1.80  Kb = .046  Adj. Slope =  149.0
 501            BA    .473
 502            LG    .150    .390   6.200    .150   5.000
 503            UC    .521    .440
 504            UA       0       3       5       8      12      20      43      75      90      96
 505            UA     100
                * DDM   ***** Preserved *****

 506            KK   CP064
 507            KM   Combine routed hydrographs from 058 and CP062 with runoff hydrograph from
 508            KM   064
 509            HC       3
                * DDM   ***** Preserved *****

 510            KK  R066-1
 511            KM   Route combined hydrograph from CP064
 512            RS       1    FLOW      -1
 513            RC   0.045   0.035   0.045     934   0.021
 514            RX       0      31      66     104     111     121     129     149
 515            RY    2281    2281    2280    2280    2281    2282    2283    2284
                * DDM   ***** Preserved *****

 516            KK     066
 517            KM   SUB-BASIN 066
 518            KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 519            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 520            KM     L =  .18  Kb = .072  Adj. Slope =  122.0
 521            BA    .006
 522            LG    .150    .350   4.200    .360   3.000
 523            UC    .225    .331
 524            UA       0       3       5       8      12      20      43      75      90      96
 525            UA     100
                * DDM   ***** Preserved *****

 526            KK   CP066
 527            KM   Combine routed hydrograph from CP064 with runoff hydrograph from 066
 528            HC       2
                *
                * Currently flow splits at this location.  With the Rawhide Wash Dam project
                * these flows will be cut off and routed to the dam site.  The routing in this
                * model indicates this.
                *
                * DDM   ***** Preserved *****
1                                   HEC-1 INPUT                                                    PAGE 15

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

 529            KK  R068-2
 530            KM   Route combined hydrograph from CP066
 531            RS       4    FLOW      -1
 532            RC   0.045   0.035   0.045    3234   0.025
 533            RX     198     224     270     283     684     688     721     769
 534            RY    2228    2227    2227  2226.5  2226.5    2227    2227    2228
                * DDM   ***** Preserved *****

 535            KK     068
 536            KM   SUB-BASIN 068
 537            KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
 538            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 539            KM     L = 1.05  Kb = .050  Adj. Slope =  133.0
 540            BA    .248
 541            LG    .150    .360   5.100    .220   3.000
 542            UC    .433    .337
 543            UA       0       3       5       8      12      20      43      75      90      96
 544            UA     100
                * DDM   ***** Preserved *****

 545            KK   CP068
 546            KM   Combine routed hydrographs from CP055 and CP066 with runoff hydrograph from
 547            KM   068
 548            HC       3
                * DDM   ***** Preserved *****

 549            KK  R070-1
 550            KM   Route combined hydrograph from CP068
 551            RS       8    FLOW      -1
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552          RC   0.045   0.035   0.045    7672   0.019
553          RX    65.2   145.6   307.4   320.0   550.3   564.7   809.8   963.5
554          RY    2130    2127    2127  2125.5  2125.5    2124    2124    2130
             * DDM   ***** Preserved *****

555          KK     070
556          KM   SUB-BASIN 070
557          KM   6-HOUR RAINFALL, PATTERN NO. 2.93 WAS USED TO FIND TC & R FOR THIS BASIN
558          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
559          KM     L = 2.68  Kb = .043  Adj. Slope =  131.0
560          BA    .794
561          LG    .170    .340   4.500    .310   3.000
562          UC    .704    .629
563          UA       0       3       5       8      12      20      43      75      90      96
564          UA     100
             * DDM   ***** Preserved *****

565          KK   CP070
566          KM   Combine routed hydrograph from CP068 with runoff hydrograph from 070
567          HC       2
568          ZZ
```

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

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

  5          005
             V
             V
 22       R010-1
             .
             .
 28          .         010
             .           .
             .           .
 38        CP010...........
             V
             V
 41       R012-1
             .
             .
 47          .         012
             .           .
             .           .
 57        CP012...........
             .
             .
 62          .-------> 012OUT
 60          D012
             V
             V
 65       R030-1
             .
             .
 71          .         030
             .           .
             .           .
 81       CP030A..........
             .
             .
 86          .         015
             .           V
             .           V
 96          .      R022-1
             .           .
             .           .
102          .           .         017
             .           .           .
             .           .           .
112          .      CP022A..........
             .           .
             .           .
117          .           .         020
             .           .           V
             .           .           V
127          .           .      R022-2
             .           .           .
             .           .           .
133          .           .           .         022
             .           .           .           .
             .           .           .           .
143          .           .      CP022B..........
             .           .           .
             .           .           .
148          .       CP022...........
             .           .
             .           .
153          .           .         024
             .           .           V
             .           .           V
163          .           .      R026-1
             .           .           .
             .           .           .
169          .           .           .         026
```

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                .           .           .           .
                .           .           .           .
179             .           .       CP026A...........
                .           .           .
                .           .           .
184             .       CP026...........
                .           V
                .           V
187             .       R030-2
                .           .
                .           .
193         CP030...........
                V
                V
198         R038-1
                .
                .
204             .         034
                .           V
                .           V
214             .       R036-1
                .           .
                .           .
220             .           .         036
                .           .           .
                .           .           .
230             .       CP036...........
                .           V
                .           V
233             .       R038-2
                .           .
                .           .
239             .           .         038
                .           .           .
                .           .           .
249             .       CP038A..........
                .           .
                .           .
254             .           .         032
                .           .           .
                .           .           .
264         CP038........................
                V
                V
269         R040-1
                .
                .
275             .         040
                .           .
                .           .
285         CP040...........
                V
                V
288         R042-1
                .
                .
294             .         041
                .           .
                .           .
304             .           .         042
                .           .           .
                .           .           .
314         CP042........................
                V
                V
317         R043-1
                .
                .
323             .         043
                .           .
                .           .
333         CP043...........
                V
                V
336         R046-1
                .
                .
342             .         044
                .           V
                .           V
352             .       R046-2
                .           .
                .           .
358             .           .         046
                .           .           .
                .           .           .
368         CP046........................
                V
                V
372         R051-1
                .
                .
378             .         048
                .           .
                .           .
388             .           .         051
```

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                .          .          .
                .          .          .
398        CP051.......................
               V
               V
401       R053-1
                .
                .
407             .         053
                .           .
                .           .
417        CP053............
               V
               V
420       R055-1
                .
                .
426             .         055
                .           .
                .           .
436        CP055............
               V
               V
439       R068-1
                .
                .
445             .         058
                .           V
                .           V
455             .      R064-1
                .           .
                .           .
461             .           .         060
                .           .           V
                .           .           V
471             .           .      R062-1
                .           .           .
                .           .           .
477             .           .           .         062
                .           .           .           .
                .           .           .           .
487             .           .       CP062............
                .           .           V
                .           .           V
490             .           .      R064-2
                .           .           .
                .           .           .
496             .           .           .         064
                .           .           .           .
                .           .           .           .
506             .       CP064........................
                .           V
                .           V
510             .      R066-1
                .           .
                .           .
516             .           .         066
                .           .           .
                .           .           .
526             .       CP066............
                .           V
                .           V
529             .      R068-2
                .           .
                .           .
535             .           .         068
                .           .           .
                .           .           .
545        CP068.......................
               V
               V
549       R070-1
                .
                .
555             .         070
                .           .
                .           .
565        CP070............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUL   1997               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   20OCT99  TIME  12:30:52  *
*                                      *
****************************************
```

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

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

  IT        HYDROGRAPH TIME DATA
                 NMIN          2  MINUTES IN COMPUTATION INTERVAL
                IDATE      1   0  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ        750  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      2   0  ENDING DATE
              NDTIME       0058  ENDING TIME
              ICENT          19  CENTURY MARK

          COMPUTATION INTERVAL     .03 HOURS
               TOTAL TIME BASE   24.97 HOURS

     ENGLISH UNITS
          DRAINAGE AREA          SQUARE MILES
          PRECIPITATION DEPTH    INCHES
          LENGTH, ELEVATION      FEET
          FLOW                   CUBIC FEET PER SECOND
          STORAGE VOLUME         ACRE-FEET
          SURFACE AREA           ACRES
          TEMPERATURE            DEGREES FAHRENHEIT
```

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	005	289.	4.53	66.	16.	16.	.42		
ROUTED TO	R010-1	288.	4.57	66.	16.	16.	.42	2867.08	4.57
HYDROGRAPH AT	010	230.	4.50	51.	13.	12.	.34		
2 COMBINED AT	CP010	518.	4.53	117.	29.	28.	.75		
ROUTED TO	R012-1	514.	4.70	117.	29.	28.	.75	2790.89	4.70
HYDROGRAPH AT	012	194.	4.50	42.	11.	10.	.30		
2 COMBINED AT	CP012	697.	4.63	158.	40.	38.	1.05		
DIVERSION TO	012OUT	249.	4.63	52.	13.	12.	1.05		
HYDROGRAPH AT	D012	448.	4.63	106.	27.	26.	1.05		
ROUTED TO	R030-1	430.	5.37	106.	27.	26.	1.05	2680.50	5.37
HYDROGRAPH AT	030	194.	4.67	56.	14.	14.	.35		
2 COMBINED AT	CP030A	552.	5.37	161.	41.	39.	1.40		
HYDROGRAPH AT	015	1021.	4.47	193.	48.	46.	1.27		
ROUTED TO	R022-1	1011.	4.67	193.	48.	46.	1.27	2728.41	4.63
HYDROGRAPH AT	017	165.	4.43	35.	9.	8.	.22		
2 COMBINED AT	CP022A	1163.	4.63	228.	57.	55.	1.48		
HYDROGRAPH AT	020	803.	4.27	136.	34.	33.	.76		
ROUTED TO	R022-2	776.	4.50	136.	34.	33.	.76	2687.70	4.50
HYDROGRAPH AT	022	231.	4.67	68.	17.	17.	.38		

2 COMBINED AT	CP022B	996.	4.50	203.	51.	49.	1.14		
2 COMBINED AT	CP022	2138.	4.60	430.	108.	104.	2.63		
HYDROGRAPH AT	024	1273.	4.17	182.	46.	44.	1.02		
ROUTED TO	R026-1	1189.	4.40	182.	46.	44.	1.02	2687.56	4.40
HYDROGRAPH AT	026	202.	4.50	56.	14.	14.	.27		
2 COMBINED AT	CP026A	1388.	4.40	238.	60.	58.	1.29		
2 COMBINED AT	CP026	3421.	4.50	667.	168.	162.	3.91		
ROUTED TO	R030-2	3409.	4.53	667.	168.	162.	3.91	2596.64	4.53
2 COMBINED AT	CP030	3599.	4.53	822.	209.	201.	5.32		
ROUTED TO	R038-1	3573.	4.60	822.	209.	201.	5.32	2575.77	4.60
HYDROGRAPH AT	034	264.	4.37	55.	14.	13.	.30		
ROUTED TO	R036-1	260.	4.60	55.	14.	13.	.30	2642.78	4.60
HYDROGRAPH AT	036	261.	4.27	51.	13.	12.	.25		
2 COMBINED AT	CP036	477.	4.50	106.	27.	26.	.55		
ROUTED TO	R038-2	477.	4.50	106.	27.	26.	.55	2573.27	4.50
HYDROGRAPH AT	038	178.	4.27	35.	9.	8.	.18		
2 COMBINED AT	CP038A	638.	4.47	141.	35.	34.	.73		
HYDROGRAPH AT	032	26.	4.23	4.	1.	1.	.03		
3 COMBINED AT	CP038	4204.	4.57	963.	246.	236.	6.08		
ROUTED TO	R040-1	4166.	4.67	963.	246.	236.	6.08	2531.00	4.67
HYDROGRAPH AT	040	282.	4.30	50.	12.	12.	.33		
2 COMBINED AT	CP040	4373.	4.67	1012.	258.	248.	6.41		
ROUTED TO	R042-1	4353.	4.70	1012.	258.	248.	6.41	2477.93	4.70
HYDROGRAPH AT	041	48.	4.30	9.	2.	2.	.06		
HYDROGRAPH AT	042	306.	4.27	53.	13.	13.	.32		
3 COMBINED AT	CP042	4581.	4.70	1073.	273.	263.	6.80		
ROUTED TO	R043-1	4516.	4.87	1072.	273.	263.	6.80	2478.01	4.87
HYDROGRAPH AT	043	145.	4.63	36.	9.	9.	.29		
2 COMBINED AT	CP043	4646.	4.87	1109.	283.	272.	7.09		
ROUTED TO									

	R046-1	4607.	4.97	1109.	283.	272.	7.09	2288.82	4.97
HYDROGRAPH AT	044	1234.	4.37	218.	55.	53.	1.40		
ROUTED TO	R046-2	1222.	4.47	218.	55.	53.	1.40	2287.75	4.47
HYDROGRAPH AT	046	97.	4.27	16.	4.	4.	.11		
3 COMBINED AT	CP046	5319.	4.93	1338.	341.	328.	8.60		
ROUTED TO	R051-1	5296.	5.00	1338.	341.	328.	8.60	2264.26	5.00
HYDROGRAPH AT	048	53.	4.20	8.	2.	2.	.06		
HYDROGRAPH AT	051	112.	4.50	26.	6.	6.	.16		
3 COMBINED AT	CP051	5380.	5.00	1371.	350.	336.	8.82		
ROUTED TO	R053-1	5374.	5.00	1371.	350.	336.	8.82	2241.91	5.00
HYDROGRAPH AT	053	93.	4.23	16.	4.	4.	.09		
2 COMBINED AT	CP053	5403.	5.00	1387.	354.	340.	8.91		
ROUTED TO	R055-1	5393.	5.03	1387.	354.	340.	8.91	2200.36	5.03
HYDROGRAPH AT	055	213.	4.63	57.	14.	14.	.37		
2 COMBINED AT	CP055	5564.	5.03	1443.	368.	354.	9.28		
ROUTED TO	R068-1	5532.	5.07	1443.	368.	354.	9.28	2199.65	5.07
HYDROGRAPH AT	058	1483.	4.47	273.	68.	66.	1.76		
ROUTED TO	R064-1	1446.	4.73	273.	68.	66.	1.76	2322.48	4.73
HYDROGRAPH AT	060	500.	4.63	130.	33.	31.	.78		
ROUTED TO	R062-1	500.	4.67	130.	33.	31.	.78	2327.79	4.67
HYDROGRAPH AT	062	614.	4.40	122.	31.	29.	.73		
2 COMBINED AT	CP062	1084.	4.53	251.	63.	61.	1.51		
ROUTED TO	R064-2	1083.	4.57	251.	63.	61.	1.51	2316.82	4.57
HYDROGRAPH AT	064	396.	4.37	76.	19.	18.	.47		
3 COMBINED AT	CP064	2817.	4.67	599.	151.	145.	3.74		
ROUTED TO	R066-1	2815.	4.67	599.	151.	145.	3.74	2282.92	4.67
HYDROGRAPH AT	066	5.	4.17	1.	0.	0.	.01		
2 COMBINED AT	CP066	2817.	4.67	600.	151.	145.	3.74		
ROUTED TO	R068-2	2801.	4.77	599.	151.	145.	3.74	2227.48	4.77

HYDROGRAPH AT	068	219.	4.30	36.	9.	9.	.25		
3 COMBINED AT	CP068	7977.	5.03	2076.	528.	507.	13.27		
ROUTED TO	R070-1	7845.	5.23	2072.	528.	507.	13.27	2126.63	5.23
HYDROGRAPH AT	070	462.	4.60	99.	25.	24.	.79		
2 COMBINED AT	CP070	8079.	5.23	2164.	553.	531.	14.06		

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

1

*** O U T P U T D A T A ***

REVISED JUNE 1988 TO UPDATE COMPUTATION OF SHORT-DURATION VALUES

PRECIPITATION FREQUENCY VALUES FOR Upper Rawhide Wash,
PRIMARY ZONE NUMBER= 7
SHORT-DURATION ZONE NUMBER= 8

POINT VALUES

RETURN PERIOD

DURATION	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR	
5-MIN	.40	.47	.53	.61	.67	.73	.88	5-MIN
10-MIN	.59	.71	.80	.93	1.03	1.13	1.35	10-MIN
15-MIN	.72	.89	1.01	1.18	1.31	1.44	1.75	15-MIN
30-MIN	.96	1.19	1.35	1.59	1.77	1.96	2.38	30-MIN
1-HR	1.17	1.47	1.68	1.98	2.21	2.45	2.99	1-HR
2-HR	1.31	1.66	1.91	2.25	2.52	2.79	3.41	2-HR
3-HR	1.41	1.79	2.06	2.43	2.73	3.02	3.69	3-HR
6-HR	1.60	2.04	2.34	2.78	3.11	3.45	4.23	6-HR
12-HR	1.83	2.35	2.71	3.23	3.63	4.03	4.94	12-HR
24-HR	2.05	2.66	3.08	3.68	4.14	4.60	5.66	24-HR

* IF YOUR SITE IS IN ARIZONA OR NEW MEXICO, PLEASE CONSULT THE
FOLLOWING PAPER FOR REVISED DEPTH-AREA VALUES:
DEPTH-AREA RATIOS IN THE SEMI-ARID SOUTHWEST UNITED STATES
NOAA TECHNICAL MEMORANDUM NWS HYDRO-40
ZEHR AND MYERS
AUGUST 1984

INPUT DATA

PROJECT NAME=Upper Rawhide Wash,
ZONE= 7 SHORT-DURATION ZONE= 8
LATITUDE= .00 LONGITUDE= 100.00 ELEVATION= 0
2-YR, 6-HR PCPN= 1.60 100-YR, 6-HR PCPN= 3.45
2-YR, 24-HR PCPN= 2.05 100-YR, 24-HR PCPN= 4.60

* * * * E N D O F R U N * * * *

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LAND USE DEFAULTS
Desert10, DRY, 10.0, 3.00, 0.150, 0.035, Low
Desert15, DRY, 15.0, 3.00, 0.150, 0.035, Low
Desert20, DRY, 20.0, 3.00, 0.150, 0.035, Low
Desert30, DRY, 30.0, 3.00, 0.150, 0.035, Low
Desert40, DRY, 40.0, 3.00, 0.150, 0.035, Low
V.L.D.R, NORMAL, 30.0, 5.00, 0.300, 0.050, Low
L.D.R., NORMAL, 50.0, 15.00, 0.300, 0.050, Low
M.D.R., NORMAL, 50.0, 30.00, 0.250, 0.050, Low
M.F.R., NORMAL, 50.0, 45.00, 0.250, 0.050, Low
Ind, NORMAL, 60.0, 55.00, 0.150, 0.030, Min
Comm, NORMAL, 75.0, 80.00, 0.100, 0.020, Min
Park, NORMAL, 90.0, 0.00, 0.200, 0.100, Hi
END_FILE
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SUBBASIN 005, Aguila/Carefree, Acres, 1.0000
SOILS
33, 14.000, 5.2, 0.23, 0
61, 220.000, 82.4, 0.15, 0
96, 33.000, 12.4, 0.07, 0
SOIL TOTALS
267.000 0.14 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 267.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
267.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 005, 0.417 0.15 0.39 3 6.20 0.15 0.035 0.047
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 010, Aguila/Carefree, Acres, 1.0000
SOILS
33, 98.000, 45.6, 0.23, 0
61, 85.000, 39.5, 0.15, 0
96, 32.000, 14.9, 0.07, 0
SOIL TOTALS
215.000 0.16 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 215.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
215.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 010, 0.336 0.15 0.39 3 5.80 0.17 0.035 0.048
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 012, Aguila/Carefree, Acres, 1.0000
SOILS
33, 172.000, 90.5, 0.23, 0
96, 18.000, 9.5, 0.07, 0
SOIL TOTALS
190.000 0.21 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 190.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
190.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 012, 0.297 0.15 0.37 3 5.20 0.22 0.035 0.049
0.37 0.25 0.00 5.20
100 0 0
SUBBASIN 015, Aguila/Carefree, Acres, 1.0000
SOILS
33, 260.100, 32.0, 0.23, 0
61, 475.200, 58.6, 0.15, 0
72, 0.500, 0.1, 0.09, 30
93, 9.500, 1.2, 0.33, 0
96, 66.300, 8.2, 0.07, 0
SOIL TOTALS
811.600 0.16 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 811.600, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
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LAND USE TOTALS
811.60 15 3 0.15 0.035 0.040 -0.013750 0.080
MCUHP 015, 1.268 0.15 0.39 3 5.80 0.17 0.035 0.040
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 017, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 6.5, 0.62, 0
33, 51.000, 37.0, 0.23, 0
61, 20.000, 14.5, 0.15, 0
72, 8.000, 5.8, 0.09, 30
SOIL TOTALS
138.000 0.14 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 138.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
138.00 15 3 0.15 0.035 0.051 -0.013750 0.080
MCUHP 017, 0.216 0.15 0.39 5 6.20 0.15 0.035 0.051
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 020, Aguila/Carefree, Acres, 1.0000
SOILS
61, 263.000, 54.0, 0.15, 0
63, 95.000, 19.5, 0.14, 25
72, 75.000, 15.4, 0.09, 30
93, 7.000, 1.4, 0.33, 0
96, 47.000, 9.7, 0.07, 0
SOIL TOTALS
487.000 0.13 9 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 487.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
487.00 15 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 020, 0.761 0.15 0.38 12 6.40 0.14 0.035 0.043
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 022, Aguila/Carefree, Acres, 1.0000
SOILS
33, 3.000, 1.2, 0.23, 0
61, 92.000, 37.7, 0.15, 0
72, 44.000, 18.0, 0.09, 30
93, 4.000, 1.6, 0.33, 0
96, 82.000, 33.6, 0.07, 0
121, 19.000, 7.8, 0.12, 0
SOIL TOTALS
244.000 0.11 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 244.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
244.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 022, 0.381 0.15 0.36 8 6.80 0.12 0.035 0.047
0.36 0.17 0.00 6.80
100 0 0
SUBBASIN 024, Aguila/Carefree, Acres, 1.0000
SOILS
33, 6.000, 0.9, 0.23, 0
61, 305.000, 46.7, 0.15, 0
63, 107.000, 16.4, 0.14, 25
72, 97.000, 14.9, 0.09, 30
93, 43.000, 6.6, 0.33, 0
96, 95.000, 14.5, 0.07, 0
121, 0.100, 0.0, 0.12, 0
SOIL TOTALS
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653.100 0.13 9 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 653.100, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
653.10 15 3 0.15 0.035 0.041 -0.013750 0.080
MCUHP 024, 1.020 0.15 0.38 12 6.40 0.14 0.035 0.041
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 026, Aguila/Carefree, Acres, 1.0000
SOILS
33, 7.500, 4.4, 0.23, 0
6, 0.200, 0.1, 0.62, 0
63, , , 0.14, 25
72, 123.000, 71.5, 0.09, 30
93, 0.300, 0.2, 0.33, 0
96, 19.000, 11.0, 0.07, 0
121, 22.000, 12.8, 0.12, 0
SOIL TOTALS
172.000 0.10 21 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 172.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
172.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 026, 0.269 0.15 0.35 24 7.00 0.11 0.035 0.049
0.35 0.15 0.00 7.00
100 0 0
SUBBASIN 030, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 4.0, 0.62, 0
33, 88.000, 38.8, 0.23, 0
61, 80.000, 35.2, 0.15, 0
72, 39.000, 17.2, 0.09, 30
93, 1.000, 0.4, 0.33, 0
96, 10.000, 4.4, 0.07, 0
SOIL TOTALS
227.000 0.17 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 227.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
227.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 030, 0.355 0.15 0.39 8 5.70 0.18 0.035 0.048
0.39 0.25 0.00 5.70
100 0 0
SUBBASIN 032, Aguila/Carefree, Acres, 1.0000
SOILS
6, 9.000, 42.9, 0.62, 0
61, 11.000, 52.4, 0.15, 0
93, 1.000, 4.8, 0.33, 0
SOIL TOTALS
21.000 0.29 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 21.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
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LAND USE TOTALS
21.000 15 3 0.15 0.035 0.062 -0.013750 0.080
MCUHP 032, 0.033 0.15 0.35 3 4.55 0.31 0.035 0.062
0.35 0.25 0.00 4.55
100 0 0
SUBBASIN 034, Aguila/Carefree, Acres, 1.0000
SOILS
33, 14.000, 7.3, 0.23, 0
61, 81.000, 42.4, 0.15, 0
63, 4.000, 2.1, 0.14, 25
72, 79.000, 41.4, 0.09, 30
93, 8.000, 4.2, 0.33, 0
96, 5.000, 2.6, 0.07, 0
SOIL TOTALS
191.000 0.13 13 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 191.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
191.00 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 034, 0.298 0.15 0.38 16 6.40 0.14 0.035 0.049
0.38 0.21 0.00 6.40
100 0 0
SUBBASIN 036, Aguila/Carefree, Acres, 1.0000
SOILS
61, 31.000, 19.4, 0.15, 0
63, 10.000, 6.2, 0.14, 25
72, 77.000, 48.1, 0.09, 30
96, 26.000, 16.2, 0.07, 0
121, 16.000, 10.0, 0.12, 0
SOIL TOTALS
160.000 0.10 16 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 160.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
160.00 15 3 0.15 0.035 0.050 -0.013750 0.080
MCUHP 036, 0.250 0.15 0.35 19 7.00 0.11 0.035 0.050
0.35 0.15 0.00 7.00
100 0 0
SUBBASIN 038, Aguila/Carefree, Acres, 1.0000
SOILS
61, 64.000, 54.7, 0.15, 0
72, 50.000, 42.7, 0.09, 30
96, 1.000, 0.9, 0.07, 0
121, 2.000, 1.7, 0.12, 0
SOIL TOTALS
117.000 0.12 13 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 117.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
117.00 15 3 0.15 0.035 0.052 -0.013750 0.080
MCUHP 038, 0.183 0.15 0.37 16 6.60 0.13 0.035 0.052
0.37 0.19 0.00 6.60
100 0 0
SUBBASIN 040, Aguila/Carefree, Acres, 1.0000
SOILS
6, 27.000, 12.9, 0.62, 0
33, 2.000, 1.0, 0.23, 0
61, 164.000, 78.1, 0.15, 0
63, 11.000, 5.2, 0.14, 25
72, 5.000, 2.4, 0.09, 30
121, 1.000, 0.5, 0.12, 0
SOIL TOTALS
210.000 0.18 2 100
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LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 210.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
210.00 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 040, 0.328 0.15 0.38 5 5.60 0.19 0.035 0.048
0.38 0.25 0.00 5.60
100 0 0
SUBBASIN 041, Aguila/Carefree, Acres, 1.0000
SOILS
6, 14.600, 35.5, 0.62, 0
33, 0.980, 2.4, 0.23, 0
61, 25.500, 62.1, 0.15, 0
SOIL TOTALS
41.080 0.25 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 41.080, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
41.080 15 3 0.15 0.035 0.058 -0.013750 0.080
MCUHP 041, 0.064 0.15 0.35 3 4.80 0.26 0.035 0.058
0.35 0.25 0.00 4.80
100 0 0
SUBBASIN 042, Aguila/Carefree, Acres, 1.0000
SOILS
6, 4.720, 2.3, 0.62, 0
61, 162.400, 78.2, 0.15, 0
63, 37.400, 18.0, 0.14, 25
72, 3.200, 1.5, 0.09, 30
SOIL TOTALS
207.720 0.15 5 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 207.720, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
207.72 15 3 0.15 0.035 0.048 -0.013750 0.080
MCUHP 042, 0.325 0.15 0.40 8 6.00 0.16 0.035 0.048
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 043, Aguila/Carefree, Acres, 1.0000
SOILS
6, 44.900, 24.6, 0.62, 0
33, 40.200, 22.0, 0.23, 0
61, 67.000, 36.7, 0.15, 0
122, 30.700, 16.8, 0.33, 0
SOIL TOTALS
182.800 0.27 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 182.800, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
182.80 15 3 0.15 0.035 0.049 -0.013750 0.080
MCUHP 043, 0.286 0.15 0.35 3 4.65 0.29 0.035 0.049
0.35 0.25 0.00 4.65
100 0 0
SUBBASIN 044, Aguila/Carefree, Acres, 1.0000
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SOILS
6, 49.000, 5.5, 0.62, 0
33, 36.000, 4.0, 0.23, 0
61, 679.000, 75.8, 0.15, 0
63, 72.000, 8.0, 0.14, 25
72, 8.000, 0.9, 0.09, 30
96, 33.000, 3.7, 0.07, 0
122, 19.000, 2.1, 0.33, 0
SOIL TOTALS
896.000 0.16 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 896.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
896.00 15 3 0.15 0.035 0.039 -0.013750 0.080
MCUHP 044, 1.400 0.15 0.39 5 5.80 0.17 0.035 0.039
0.39 0.25 0.00 5.80
100 0 0
SUBBASIN 046, Aguila/Carefree, Acres, 1.0000
SOILS
6, 35.000, 49.3, 0.62, 0
61, 8.000, 11.3, 0.15, 0
96, 28.000, 39.4, 0.07, 0
SOIL TOTALS
71.000 0.22 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 71.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
71.000 15 3 0.15 0.035 0.055 -0.013750 0.080
MCUHP 046, 0.111 0.15 0.36 3 5.10 0.23 0.035 0.055
0.36 0.25 0.00 5.10
100 0 0
SUBBASIN 048, Aguila/Carefree, Acres, 1.0000
SOILS
6, 20.000, 55.6, 0.62, 0
96, 16.000, 44.4, 0.07, 0
SOIL TOTALS
36.000 0.24 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 36.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
36.000 15 3 0.15 0.035 0.059 -0.013750 0.080
MCUHP 048, 0.056 0.15 0.35 3 4.90 0.25 0.035 0.059
0.35 0.25 0.00 4.90
100 0 0
SUBBASIN 051, Aguila/Carefree, Acres, 1.0000
SOILS
6, 3.000, 2.9, 0.62, 0
33, 39.000, 37.1, 0.23, 0
61, 21.000, 20.0, 0.15, 0
96, 42.000, 40.0, 0.07, 0
SOIL TOTALS
105.000 0.14 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 105.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
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Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
105.00 15 3 0.15 0.035 0.052 -0.013750 0.080
MCUHP 051, 0.164 0.15 0.39 3 6.20 0.15 0.035 0.052
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 053, Aguila/Carefree, Acres, 1.0000
SOILS
6, 14.000, 23.3, 0.62, 0
96, 46.000, 76.7, 0.07, 0
SOIL TOTALS
60.000 0.12 0 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 60.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.06,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
60.000 15 3 0.15 0.035 0.056 -0.013750 0.080
MCUHP 053, 0.094 0.15 0.37 3 6.60 0.13 0.035 0.056
0.37 0.19 0.00 6.60
100 0 0
SUBBASIN 055, Aguila/Carefree, Acres, 1.0000
SOILS
6, 1.000, 0.4, 0.62, 0
33, 103.000, 44.0, 0.23, 0
61, 59.000, 25.2, 0.15, 0
63, 17.000, 7.3, 0.14, 25
96, 54.000, 23.1, 0.07, 0
SOIL TOTALS
234.000 0.15 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 234.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
234.00 15 3 0.15 0.035 0.047 -0.013750 0.080
MCUHP 055, 0.366 0.15 0.40 5 6.00 0.16 0.035 0.047
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 058, Aguila/Carefree, Acres, 1.0000
SOILS
6, 51.000, 4.5, 0.62, 0
33, 1.000, 0.1, 0.23, 0
61, 936.000, 83.3, 0.15, 0
63, 47.000, 4.2, 0.14, 25
72, 2.000, 0.2, 0.09, 30
96, 87.000, 7.7, 0.07, 0
SOIL TOTALS
1124.000 0.15 1 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 1124.00, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.04,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
1124.0 15 3 0.15 0.035 0.038 -0.013750 0.080
MCUHP 058, 1.756 0.15 0.40 4 6.00 0.16 0.035 0.038
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 060, Aguila/Carefree, Acres, 1.0000
SOILS
61, 407.000, 81.7, 0.15, 0
63, 64.000, 12.9, 0.14, 25
96, 27.000, 5.4, 0.07, 0
SOIL TOTALS
498.000 0.14 3 100
LAND USE
Desert10, 498.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
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Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
498.00 10 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 060, 0.778 0.15 0.39 6 6.20 0.14 0.035 0.043
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 062, Aguila/Carefree, Acres, 1.0000
SOILS
6, 11.000, 2.4, 0.62, 0
61, 331.000, 70.9, 0.15, 0
63, 96.000, 20.6, 0.14, 25
96, 29.000, 6.2, 0.07, 0
SOIL TOTALS
467.000 0.15 5 100
LAND USE
Desert10, 467.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
467.00 10 3 0.15 0.035 0.043 -0.013750 0.080
MCUHP 062, 0.730 0.15 0.40 8 6.00 0.15 0.035 0.043
0.40 0.25 0.00 6.00
100 0 0
SUBBASIN 064, Aguila/Carefree, Acres, 1.0000
SOILS
6, 47.000, 15.5, 0.62, 0
33, 3.000, 1.0, 0.23, 0
61, 106.000, 35.0, 0.15, 0
63, 25.000, 8.3, 0.14, 25
96, 122.000, 40.3, 0.07, 0
SOIL TOTALS
303.000 0.14 2 100
LAND USE
Desert10, , , DRY, 10, 3, 0.15, 0.035, Low, ,
Desert15, 303.000, 100.0, DRY, 15, 3, 0.15, 0.035, Low, 0.05,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
303.00 15 3 0.15 0.035 0.046 -0.013750 0.080
MCUHP 064, 0.473 0.15 0.39 5 6.20 0.15 0.035 0.046
0.39 0.23 0.00 6.20
100 0 0
SUBBASIN 066, Aguila/Carefree, Acres, 1.0000
SOILS
6, 3.000, 75.0, 0.62, 0
96, 1.000, 25.0, 0.07, 0
SOIL TOTALS
4.000 0.36 0 100
LAND USE
Desert10, 4.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.07,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
4.000 10 3 0.15 0.035 0.072 -0.013750 0.080
MCUHP 066, 0.006 0.15 0.35 3 4.20 0.36 0.035 0.072
0.35 0.25 0.00 4.20
100 0 0
SUBBASIN 068, Aguila/Carefree, Acres, 1.0000
SOILS
6, 34.000, 21.4, 0.62, 0
33, 23.000, 14.5, 0.23, 0
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93, 33.000, 20.8, 0.33, 0
96, 52.000, 32.7, 0.07, 0
122, 17.000, 10.7, 0.33, 0
SOIL TOTALS
159.000 0.22 0 100
LAND USE
Desert10, 159.000, 100.0, DRY, 10, 3, 0.15, 0.035, Low, 0.05,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, , , NORMAL, 30, 5, 0.30, 0.050, Low, ,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
159.00 10 3 0.15 0.035 0.050 -0.013750 0.080
MCUHP 068, 0.248 0.15 0.36 3 5.10 0.22 0.035 0.050
0.36 0.25 0.00 5.10
100 0 0
SUBBASIN 070, Aguila/Carefree, Acres, 1.0000
SOILS
6, 112.000, 22.0, 0.62, 0
33, 29.000, 5.7, 0.23, 0
61, 8.000, 1.6, 0.15, 0
90, 28.000, 5.5, 0.39, 0
93, 18.000, 3.5, 0.33, 0
96, 70.000, 13.8, 0.07, 0
122, 243.000, 47.8, 0.33, 0
SOIL TOTALS
508.000 0.30 0 100
LAND USE
Desert10, 457.000, 90.0, DRY, 10, 3, 0.15, 0.035, Low, 0.04,
Desert15, , , DRY, 15, 3, 0.15, 0.035, Low, ,
Desert20, , , DRY, 20, 3, 0.15, 0.035, Low, ,
Desert30, , , DRY, 30, 3, 0.15, 0.035, Low, ,
Desert40, , , DRY, 40, 3, 0.15, 0.035, Low, ,
V.L.D.R, 51.000, 10.0, NORMAL, 30, 5, 0.30, 0.050, Low, 0.06,
L.D.R., , , NORMAL, 50, 15, 0.30, 0.050, Low, ,
M.D.R., , , NORMAL, 50, 30, 0.25, 0.050, Low, ,
M.F.R., , , NORMAL, 50, 45, 0.25, 0.050, Low, ,
Ind, , , NORMAL, 60, 55, 0.15, 0.030, Min, ,
Comm, , , NORMAL, 75, 80, 0.10, 0.020, Min, ,
Park, , , NORMAL, 90, 0, 0.20, 0.100, Hi, ,
LAND USE TOTALS
508.00 12 3 0.17 0.036 0.043 -0.013750 0.080
MCUHP 070, 0.794 0.17 0.34 3 4.50 0.31 0.036 0.043
0.35 0.25 0.00 4.50
90 10 0
```

```
E3102-24.M10                          Name of output file
DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 24 hr storm
1                                     1=single storm, 2=multiple storm
14.06                                 storm size (sq. miles)
3                                     rain: 1=6hr, 2=2hr, 3=24hr, 4=manual
4.60                                  point rainfall depth
0.928                                 aerial reduction
005                           <*****  basin name *************************
0.417                                 basin area (square miles)
2.10                                  flow path length (miles)
0.047                                 basin roughness - Kb
130.0        HE=3140.0                basin slope (ft./mile)
1           LE=2866.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
010                           <*****  basin name *************************
0.336                                 basin area (square miles)
1.93                                  flow path length (miles)
0.048                                 basin roughness - Kb
146.0        HE=3130.0                basin slope (ft./mile)
1           LE=2848.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
012                           <*****  basin name *************************
0.297                                 basin area (square miles)
1.68                                  flow path length (miles)
0.049                                 basin roughness - Kb
117.0        HE=2970.0                basin slope (ft./mile)
1           LE=2774.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 5.20 0.220 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
015                           <*****  basin name *************************
1.268                                 basin area (square miles)
2.54                                  flow path length (miles)
0.040                                 basin roughness - Kb
108.0        HE=2960.0                basin slope (ft./mile)
1           LE=2686.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 3.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
017                           <*****  basin name *************************
0.216                                 basin area (square miles)
1.34                                  flow path length (miles)
0.051                                 basin roughness - Kb
113.0        HE=2755.0                basin slope (ft./mile)
1           LE=2604.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 5.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
020                           <*****  basin name *************************
0.761                                 basin area (square miles)
1.74                                  flow path length (miles)
0.043                                 basin roughness - Kb
199.0        HE=3020.0                basin slope (ft./mile)
1           LE=2673.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 12.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
022                           <*****  basin name *************************
0.381                                 basin area (square miles)
2.71                                  flow path length (miles)
0.047                                 basin roughness - Kb
128.0        HE=2952.0                basin slope (ft./mile)
1           LE=2604.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 6.80 0.120 8.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
024                           <*****  basin name *************************
1.020                                 basin area (square miles)
1.35                                  flow path length (miles)
0.041                                 basin roughness - Kb
294.0        HE=3237.0                basin slope (ft./mile)
1           LE=2704.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 12.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
026                           <*****  basin name *************************
0.269                                 basin area (square miles)
2.41                                  flow path length (miles)
0.049                                 basin roughness - Kb
249.8        HE=3250.0                basin slope (ft./mile)
1           LE=2604.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 7.00 0.110 24.0           IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
1                                     Continue? 1 = next subbasin, 2 = stop
030                           <*****  basin name *************************
0.355                                 basin area (square miles)
2.38                                  flow path length (miles)
0.048                                 basin roughness - Kb
100.0        HE=2821.0                basin slope (ft./mile)
1           LE=2582.0                 loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.70 0.180 8.0            IA, DTHETA, PSIF, XKSAT, RTIMP
2                                     UA-record: 1=urban, 2=natural, 3=manual input
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1                                   Continue? 1 = next subbasin, 2 = stop
032                         <*****  basin name *************************
0.033                               basin area (square miles)
0.40                                flow path length (miles)
0.062                               basin roughness - Kb
100.0        HE=2598.0              basin slope (ft./mile)
1           LE=2558.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.55 0.310 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
034                         <*****  basin name *************************
0.298                               basin area (square miles)
1.32                                flow path length (miles)
0.049                               basin roughness - Kb
97.0        HE=2804.0               basin slope (ft./mile)
1           LE=2676.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 6.40 0.140 16.0         IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
036                         <*****  basin name *************************
0.250                               basin area (square miles)
1.37                                flow path length (miles)
0.050                               basin roughness - Kb
278.2        HE=3054.0              basin slope (ft./mile)
1           LE=2570.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 7.00 0.110 19.0         IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
038                         <*****  basin name *************************
0.183                               basin area (square miles)
1.27                                flow path length (miles)
0.052                               basin roughness - Kb
303.0        HE=3198.0              basin slope (ft./mile)
1           LE=2558.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 6.60 0.130 16.0         IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
040                         <*****  basin name *************************
0.328                               basin area (square miles)
1.56                                flow path length (miles)
0.048                               basin roughness - Kb
245.0        HE=2896.0              basin slope (ft./mile)
1           LE=2490.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.380 5.60 0.190 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
041                         <*****  basin name *************************
0.064                               basin area (square miles)
0.69                                flow path length (miles)
0.058                               basin roughness - Kb
133.0        HE=2544.0              basin slope (ft./mile)
1           LE=2452.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.80 0.260 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
042                         <*****  basin name *************************
0.325                               basin area (square miles)
1.51                                flow path length (miles)
0.048                               basin roughness - Kb
296.4        HE=3054.0              basin slope (ft./mile)
1           LE=2452.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 8.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
043                         <*****  basin name *************************
0.286                               basin area (square miles)
1.92                                flow path length (miles)
0.049                               basin roughness - Kb
99.0        HE=2512.0               basin slope (ft./mile)
1           LE=2322.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.65 0.290 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
044                         <*****  basin name *************************
1.400                               basin area (square miles)
2.99                                flow path length (miles)
0.039                               basin roughness - Kb
240.0        HE=3054.0              basin slope (ft./mile)
1           LE=2306.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 5.80 0.170 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
046                         <*****  basin name *************************
0.111                               basin area (square miles)
0.67                                flow path length (miles)
0.055                               basin roughness - Kb
101.0        HE=2346.0              basin slope (ft./mile)
1           LE=2278.0               loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 5.10 0.230 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
048                         <*****  basin name *************************
0.056                               basin area (square miles)
0.43                                flow path length (miles)
0.059                               basin roughness - Kb
112.0        HE=2300.0              basin slope (ft./mile)
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1          LE=2252.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.90 0.250 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
051                        <*****   basin name *************************
0.164                               basin area (square miles)
1.41                                flow path length (miles)
0.052                               basin roughness - Kb
128.0       HE=2432.0               basin slope (ft./mile)
1          LE=2252.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
053                        <*****   basin name *************************
0.094                               basin area (square miles)
0.66                                flow path length (miles)
0.056                               basin roughness - Kb
126.0       HE=2313.0               basin slope (ft./mile)
1          LE=2230.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.370 6.60 0.130 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
055                        <*****   basin name *************************
0.366                               basin area (square miles)
2.43                                flow path length (miles)
0.047                               basin roughness - Kb
125.0       HE=2516.0               basin slope (ft./mile)
1          LE=2213.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
058                        <*****   basin name *************************
1.756                               basin area (square miles)
2.86                                flow path length (miles)
0.038                               basin roughness - Kb
120.0       HE=2808.0               basin slope (ft./mile)
1          LE=2464.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.160 4.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
060                        <*****   basin name *************************
0.778                               basin area (square miles)
3.39                                flow path length (miles)
0.043                               basin roughness - Kb
152.0       HE=2846.0               basin slope (ft./mile)
1          LE=2330.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.140 6.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
062                        <*****   basin name *************************
0.730                               basin area (square miles)
2.26                                flow path length (miles)
0.043                               basin roughness - Kb
158.0       HE=2680.0               basin slope (ft./mile)
1          LE=2324.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.400 6.00 0.150 8.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
064                        <*****   basin name *************************
0.473                               basin area (square miles)
1.80                                flow path length (miles)
0.046                               basin roughness - Kb
149.0       HE=2555.0               basin slope (ft./mile)
1          LE=2287.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.390 6.20 0.150 5.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
066                        <*****   basin name *************************
0.006                               basin area (square miles)
0.18                                flow path length (miles)
0.072                               basin roughness - Kb
122.0       HE=2287.0               basin slope (ft./mile)
1          LE=2265.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.350 4.20 0.360 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
068                        <*****   basin name *************************
0.248                               basin area (square miles)
1.05                                flow path length (miles)
0.050                               basin roughness - Kb
133.0       HE=2324.0               basin slope (ft./mile)
1          LE=2184.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.150 0.360 5.10 0.220 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
1                                   Continue? 1 = next subbasin, 2 = stop
070                        <*****   basin name *************************
0.794                               basin area (square miles)
2.68                                flow path length (miles)
0.043                               basin roughness - Kb
131.0       HE=2385.0               basin slope (ft./mile)
1          LE=2035.0                loss method: 1=Green-Ampt, 2 = init & uniform
0.170 0.340 4.50 0.310 3.0          IA, DTHETA, PSIF, XKSAT, RTIMP
2                                   UA-record: 1=urban, 2=natural, 3=manual input
2                                   Continue? 1 = next subbasin, 2 = stop
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ID DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 24 hr storm
ID
IT     5                    300
IO     3
KK
KM SUB-BASIN 005
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.10  Kb = .047  Adj. Slope =  130.0
BA  .417
IN    15
KM RAINFALL DEPTH OF 4.60 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
PB 4.269
KM THE FOLLOWING PC RECORD USED A 24-HR SCS TYPE II STORM
PC  .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
PC  .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
PC  .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
PC  .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
PC  .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
PC  .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
PC  .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
PC  .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
PC  .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
PC  .983    .986    .989    .992    .995    .998   1.000
LG  .150    .390   6.200    .150   3.000
UC  .475    .483
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 010
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.93  Kb = .048  Adj. Slope =  146.0
BA  .336
LG  .150    .390   5.800    .170   3.000
UC  .442    .471
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 012
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.68  Kb = .049  Adj. Slope =  117.0
BA  .297
LG  .150    .370   5.200    .220   3.000
UC  .450    .461
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 015
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.54  Kb = .040  Adj. Slope =  108.0
BA 1.268
LG  .150    .390   5.800    .170   3.000
UC  .525    .333
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 017
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.34  Kb = .051  Adj. Slope =  113.0
BA  .216
LG  .150    .390   6.200    .150   5.000
UC  .400    .405
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 020
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.74  Kb = .043  Adj. Slope =  199.0
BA  .761
LG  .150    .380   6.400    .140  12.000
UC  .338    .202
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 022
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.71  Kb = .047  Adj. Slope =  128.0
BA  .381
LG  .150    .360   6.800    .120   8.000
UC  .563    .752
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 024
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.35  Kb = .041  Adj. Slope =  294.0
BA 1.020
LG  .150    .380   6.400    .140  12.000
UC  .242    .096
```

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UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 026
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.41  Kb = .049  Adj. Slope =  249.8
BA  .269
LG  .150    .350   7.000    .110  24.000
UC  .404    .578
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 030
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.38  Kb = .048  Adj. Slope =  100.0
BA  .355
LG  .150    .390   5.700    .180   8.000
UC  .600    .758
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 032
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .40  Kb = .062  Adj. Slope =  100.0
BA  .033
LG  .150    .350   4.550    .310   3.000
UC  .233    .247
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 034
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.32  Kb = .049  Adj. Slope =   97.0
BA  .298
LG  .150    .380   6.400    .140  16.000
UC  .408    .341
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 036
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.37  Kb = .050  Adj. Slope =  278.2
BA  .250
LG  .150    .350   7.000    .110  19.000
UC  .275    .250
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 038
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.27  Kb = .052  Adj. Slope =  303.0
BA  .183
LG  .150    .370   6.600    .130  16.000
UC  .262    .267
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 040
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.56  Kb = .048  Adj. Slope =  245.0
BA  .328
LG  .150    .380   5.600    .190   5.000
UC  .317    .278
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 041
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .69  Kb = .058  Adj. Slope =  133.0
BA  .064
LG  .150    .350   4.800    .260   3.000
UC  .271    .309
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 042
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.51  Kb = .048  Adj. Slope =  296.4
BA  .325
LG  .150    .400   6.000    .160   8.000
UC  .283    .241
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 043
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
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KM   L = 1.92  Kb = .049  Adj. Slope =   99.0
BA  .286
LG  .150    .350   4.650    .290   3.000
UC  .538    .639
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 044
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.99  Kb = .039  Adj. Slope =  240.0
BA 1.400
LG  .150    .390   5.800    .170   5.000
UC  .417    .278
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 046
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .67  Kb = .055  Adj. Slope =  101.0
BA  .111
LG  .150    .360   5.100    .230   3.000
UC  .287    .236
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 048
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .43  Kb = .059  Adj. Slope =  112.0
BA  .056
LG  .150    .350   4.900    .250   3.000
UC  .225    .186
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 051
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.41  Kb = .052  Adj. Slope =  128.0
BA  .164
LG  .150    .390   6.200    .150   3.000
UC  .400    .494
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 053
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .66  Kb = .056  Adj. Slope =  126.0
BA  .094
LG  .150    .370   6.600    .130   3.000
UC  .258    .227
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 055
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.43  Kb = .047  Adj. Slope =  125.0
BA  .366
LG  .150    .400   6.000    .160   5.000
UC  .538    .670
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 058
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.86  Kb = .038  Adj. Slope =  120.0
BA 1.756
LG  .150    .400   6.000    .160   4.000
UC  .525    .304
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 060
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 3.39  Kb = .043  Adj. Slope =  152.0
BA  .778
LG  .150    .390   6.200    .140   6.000
UC  .583    .623
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 062
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.26  Kb = .043  Adj. Slope =  158.0
BA  .730
LG  .150    .400   6.000    .150   8.000
UC  .438    .340
UA     0       3       5       8      12      20      43      75      90      96
UA   100
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KK
KM SUB-BASIN 064
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.80  Kb = .046  Adj. Slope =  149.0
BA  .473
LG  .150    .390   6.200    .150   5.000
UC  .404    .332
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 066
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L =  .18  Kb = .072  Adj. Slope =  122.0
BA  .006
LG  .150    .350   4.200    .360   3.000
UC  .158    .224
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 068
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 1.05  Kb = .050  Adj. Slope =  133.0
BA  .248
LG  .150    .360   5.100    .220   3.000
UC  .321    .241
UA     0       3       5       8      12      20      43      75      90      96
UA   100
KK
KM SUB-BASIN 070
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
KM   L = 2.68  Kb = .043  Adj. Slope =  131.0
BA  .794
LG  .170    .340   4.500    .310   3.000
UC  .550    .478
UA     0       3       5       8      12      20      43      75      90      96
UA   100
ZZ
```

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUL   1997                *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   20OCT99  TIME  17:10:39   *
*                                       *
*****************************************
```

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

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

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

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1                                   HEC-1 INPUT                                                    PAGE  1

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

  1           ID   DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 24 hr storm
              * ******************************************************************************
              *                                                                              *
              *                Flood Control District of Maricopa County                     *
              *             Upper Rawhide Wash Floodplain Delineation Study                  *
              *                              FCD98-12                                        *
              *                                                                              *
              *                         EXISTING CONDITIONS HYDROLOGY                        *
              *                                                                              *
              *                           100 yr, 24 hr storm event                          *
              *                   Prepared by Kimley-Horn and Associates, Inc.               *
              *                             KHA Job No. 091131.02                            *
              *                                                                              *
              *                                 October 1999                                 *
              *                                                                              *
              *                                                                              *
              *  This hydrology represents conditions of the Upper Rawhide Wash and its      *
              *  tributaries in existing conditions.                                         *
              *                                                                              *
              *  There are two existing flow splits at CP062 and CP066, they will be cut off *
              *  and routed 100% to the dam site as part of the dam project.  This model     *
              *  accounts for the proposed diversion works with Rawhide Wash Dam.            *
              *                                                                              *
              *  Input parameters for the model were determined using the Flood Control      *
              *  District of Maricopa County's (FCDMC) Drainage Design Menu System (DDMS).   *
              *                                                                              *
              *  The values entered into DDMS were based on the following:                   *
              *                                                                              *
              *       Rainfall depths   Point precipitation values were determined using     *
              *                         the isopluvial maps in the FCDMC Hydrology Manual    *
              *                                                                              *
              *       Rainfall excess   The Green and Ampt Methodology was used for          *
              *                         estimation of rainfall losses.  Digital soil         *
              *                         maps for the City of Scottsdale were used to         *
              *                         determine soil distributions.                        *
              *                                                                              *
              *                         Existing land use conditions were determined from    *
              *                         the City of Scottsdale General Plan digital          *
              *                         zoning map and aerial photos.                        *
              *                                                                              *
              *       Unit hydrographs  The Clark Unit Hydrograph methodology was applied.   *
              *                         City of Scottsdale digital topographic mapping       *
              *                         with 1' and 2' contour intervals was used.           *
              *                                                                              *
              *       Routing           Normal Depth Channel Routing was used with 8 point   *
              *                         cross sections approximated from the BOSS River      *
              *                         Modeling System.                                     *
              *                                                                              *
              * ******************************************************************************
              *
              *DIAGRAM
  2           IT       2                    750
  3           IO       5
  4           IN      15
              * DDM   ***** Preserved *****
1                                   HEC-1 INPUT                                                    PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 5          KK     005
 6          KM   SUB-BASIN 005
 7          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 8          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 9          KM     L = 2.10  Kb = .047  Adj. Slope =  130.0
10          BA    .417
11          IN      15
12          KM   RAINFALL DEPTH OF 4.60 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
13          PB   4.269
14          KM   THE FOLLOWING PC RECORD USED A 24-HR SCS TYPE II STORM
15          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
16          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
17          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
18          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
19          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
20          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
21          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
22          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
23          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
24          PC    .983    .986    .989    .992    .995    .998   1.000
25          LG    .150    .390   6.200    .150   3.000
26          UC    .475    .483
27          UA       0       3       5       8      12      20      43      75      90      96
28          UA     100
            * DDM   ***** Preserved *****

29          KK  R010-1
30          KM   Route the runoff hydrograph from CP005 to CP010
31          RS       1    FLOW      -1
32          RC   0.045   0.035   0.045     884   0.024
33          RX       0      40     156     172     201     253     546     571
34          RY    2870    2868    2868    2866    2866    2868    2868    2870
            * DDM   ***** Preserved *****

35          KK     010
36          KM   SUB-BASIN 010
37          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
38          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
39          KM     L = 1.93  Kb = .048  Adj. Slope =  146.0
40          BA    .336
41          LG    .150    .390   5.800    .170   3.000
42          UC    .442    .471
43          UA       0       3       5       8      12      20      43      75      90      96
44          UA     100
            * DDM   ***** Preserved *****

45          KK   CP010
46          KM   Combine routed hydrograph from 005 and runoff hydrograph from 010
47          HC       2
            * DDM   ***** Preserved *****
                                    HEC-1 INPUT                                          PAGE  3

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

48          KK  R012-1
49          KM   Route the combined hydrograph from CP010 to CP012
50          RS       5    FLOW      -1
51          RC   0.045   0.035   0.045    3716   0.019
52          RX     261     486     555     684     700     716     743     778
53          RY    2794    2792    2792    2790    2788    2790    2792    2794
            * DDM   ***** Preserved *****

54          KK     012
55          KM   SUB-BASIN 012
56          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
57          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
58          KM     L = 1.68  Kb = .049  Adj. Slope =  117.0
59          BA    .297
60          LG    .150    .370   5.200    .220   3.000
61          UC    .450    .461
62          UA       0       3       5       8      12      20      43      75      90      96
63          UA     100
            * DDM   ***** Preserved *****

64          KK   CP012
65          KM   Combine runoff hydrograph from 012 with routed hydrograph from CP010
66          HC       2
            * DDM   ***** Preserved *****

67          KK    D012
68          KM   Divert flow away from main Rawhide Wash to the West.
69          DT  012OUT
70          DI       0      43     152     330     586     929    1365
71          DQ       0      10      43     105     203     344     533
            * DDM   ***** Preserved *****

72          KK  R030-1
73          KM   Route the combined hydrograph from CP012 to CP030A.
74          RS      26    FLOW      -1
75          RC   0.045   0.035   0.045   10780   0.018
76          RX     428     497     753     780     835     868     897     992
77          RY    2684    2680    2680    2682    2682    2680    2680    2684
            * DDM   ***** Preserved *****
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 78          KK     030
 79          KM   SUB-BASIN 030
 80          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 81          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 82          KM     L = 2.38  Kb = .048  Adj. Slope =  100.0
 83          BA    .355
 84          LG    .150    .390   5.700    .180   8.000
 85          UC    .600    .758
 86          UA       0       3       5       8      12      20      43      75      90      96
 87          UA     100
             * DDM   ***** Preserved *****
1                                   HEC-1 INPUT                                          PAGE  4

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

 88          KK  CP030A
 89          KM   Combine routed hydrograph from CP012 with runoff hydrograph 030.
 90          KM   This combination was made for use in the hydraulic modeling of a
 91          KM   tributary to Rawhide Wash.
 92          HC       2
             * DDM   ***** Preserved *****

 93          KK     015
 94          KM   SUB-BASIN 015
 95          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 96          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 97          KM     L = 2.54  Kb = .040  Adj. Slope =  108.0
 98          BA   1.268
 99          LG    .150    .390   5.800    .170   3.000
100          UC    .525    .333
101          UA       0       3       5       8      12      20      43      75      90      96
102          UA     100
             * DDM   ***** Preserved *****

103          KK  R022-1
104          KM   Route the runoff hydrograph from 015 to CP022A.
105          RS       6    FLOW      -1
106          RC   0.045   0.035   0.045    4466   0.018
107          RX    9714    9798    9905    9943   10002   10037   10299   10412
108          RY    2740    2734    2734    2728    2726    2728    2730    2740
             * DDM   ***** Preserved *****

109          KK     017
110          KM   SUB-BASIN 017
111          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
112          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
113          KM     L = 1.34  Kb = .051  Adj. Slope =  113.0
114          BA    .216
115          LG    .150    .390   6.200    .150   5.000
116          UC    .400    .405
117          UA       0       3       5       8      12      20      43      75      90      96
118          UA     100
             * DDM   ***** Preserved *****

119          KK  CP022A
120          KM   Combine routed hydrograph from 015 with runoff hydrograph from 017.
121          KM   This combination was made for use in the hydraulic modeling of a
122          KM   tributary to Rawhide Wash.
123          HC       2
             * DDM   ***** Preserved *****

124          KK     020
125          KM   SUB-BASIN 020
126          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
127          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
128          KM     L = 1.74  Kb = .043  Adj. Slope =  199.0
129          BA    .761
130          LG    .150    .380   6.400    .140  12.000
131          UC    .338    .202
1                                   HEC-1 INPUT                                          PAGE  5

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

132          UA       0       3       5       8      12      20      43      75      90      96
133          UA     100
             * DDM   ***** Preserved *****

134          KK  R022-2
135          KM   Route the runoff hydrograph from 020 to CP022B
136          RS       6    FLOW      -1
137          RC   0.045   0.035   0.045    4146   0.017
138          RX    9805    9902   10081   10090   10098   10102   10253   10264
139          RY    2690    2686    2688    2686    2686    2688    2688    2690
             * DDM   ***** Preserved *****

140          KK     022
141          KM   SUB-BASIN 022
142          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
143          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
144          KM     L = 2.71  Kb = .047  Adj. Slope =  128.0
145          BA    .381
146          LG    .150    .360   6.800    .120   8.000
147          UC    .563    .752
148          UA       0       3       5       8      12      20      43      75      90      96
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149          UA     100
             * DDM   ***** Preserved *****

150          KK  CP022B
151          KM   Combine routed hydrograph from 020 with runoff hydrograph from 022.
152          KM   This combination was made for use in the hydraulic modeling of a
153          KM   tributary to Rawhide Wash.
154          HC       2
             * DDM   ***** Preserved *****

155          KK   CP022
156          KM   Combine hydrographs from CP022A and CP022B.
157          KM   This combination was made for use in the hydraulic modeling of a
158          KM   tributary to Rawhide Wash.
159          HC       2
             * DDM   ***** Preserved *****

160          KK     024
161          KM   SUB-BASIN 024
162          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
163          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
164          KM     L = 1.35  Kb = .041  Adj. Slope =  294.0
165          BA   1.020
166          LG    .150    .380   6.400    .140  12.000
167          UC    .242    .096
168          UA       0       3       5       8      12      20      43      75      90      96
169          UA     100
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE  6

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

170          KK  R026-1
171          KM   Route the runoff hydrograph from 024 to CP026A.
172          RS       6    FLOW      -1
173          RC   0.045   0.035   0.045    6097   0.016
174          RX    9712    9782    9851    9931    9950   10050   10176   10237
175          RY    2700    2692    2688    2688    2686    2686    2696    2700
             * DDM   ***** Preserved *****

176          KK     026
177          KM   SUB-BASIN 026
178          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
179          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
180          KM     L = 2.41  Kb = .049  Adj. Slope =  249.8
181          BA    .269
182          LG    .150    .350   7.000    .110  24.000
183          UC    .404    .578
184          UA       0       3       5       8      12      20      43      75      90      96
185          UA     100
             * DDM   ***** Preserved *****

186          KK  CP026A
187          KM   Combine routed hydrograph from 024 with runoff hydrograph from 026.
188          KM   This combination was made for use in the hydraulic modeling of a
189          KM   tributary to Rawhide Wash.
190          HC       2
             * DDM   ***** Preserved *****

191          KK   CP026
192          KM   Combine hydrographs from CP022 and CP026A.
193          KM   This combination was made for use in the hydraulic modeling of a
194          KM   tributary to Rawhide Wash.
195          HC       2
             * DDM   ***** Preserved *****

196          KK  R030-2
197          KM   Route the combined hydrograph from CP026 to CP030
198          RS       1    FLOW      -1
199          RC   0.045   0.035   0.045    1354   0.016
200          RX     214     314     479     518     654     771     852     939
201          RY    2604    2598    2598    2596    2596    2594    2594    2604
             * DDM   ***** Preserved *****

202          KK   CP030
203          KM   Combine hydrograph from CP026 and CP030A.
204          KM   This combination was made for use in the hydraulic modeling of a
205          KM   tributary to Rawhide Wash.
206          HC       2
             * DDM   ***** Preserved *****
                                     HEC-1 INPUT                                          PAGE  7

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

207          KK  R038-1
208          KM   Route combined hydrograph from CP030 to CP038
209          RS       2    FLOW      -1
210          RC   0.045   0.035   0.045    1605   0.012
211          RX     290     378     536     538     607     650     727     753
212          RY    2582    2576    2574    2572    2572    2580    2580    2582
             * DDM   ***** Preserved *****

213          KK     034
214          KM   SUB-BASIN 034
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215          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
216          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
217          KM     L = 1.32  Kb = .049  Adj. Slope =   97.0
218          BA    .298
219          LG    .150    .380   6.400    .140  16.000
220          UC    .408    .341
221          UA       0       3       5       8      12      20      43      75      90      96
222          UA     100
             * DDM   ***** Preserved *****

223          KK  R036-1
224          KM   Route runoff hydrograph from 034 to CP036
225          RS       8    FLOW      -1
226          RC   0.045   0.035   0.045    5295   0.019
227          RX    9725    9842    9891    9970   10030   10032   10143   10241
228          RY    2652    2646    2646    2642    2642    2644    2644    2652
             * DDM   ***** Preserved *****

229          KK     036
230          KM   SUB-BASIN 036
231          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
232          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
233          KM     L = 1.37  Kb = .050  Adj. Slope =  278.2
234          BA    .250
235          LG    .150    .350   7.000    .110  19.000
236          UC    .275    .250
237          UA       0       3       5       8      12      20      43      75      90      96
238          UA     100
             * DDM   ***** Preserved *****

239          KK   CP036
240          KM   Combine routed hydrograph from 034 with runoff hydrograph from 036
241          HC       2
             * DDM   ***** Preserved *****

242          KK  R038-2
243          KM   Route combined hydrograph from CP036 to CP038A.
244          RS       1    FLOW      -1
245          RC   0.045   0.035   0.045     483   0.025
246          RX    9837    9891    9971    9988   10012   10126   10148   10177
247          RY    2578    2574    2574    2572    2572    2574    2576    2578
             * DDM   ***** Preserved *****
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

248          KK     038
249          KM   SUB-BASIN 038
250          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
251          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
252          KM     L = 1.27  Kb = .052  Adj. Slope =  303.0
253          BA    .183
254          LG    .150    .370   6.600    .130  16.000
255          UC    .262    .267
256          UA       0       3       5       8      12      20      43      75      90      96
257          UA     100
             * DDM   ***** Preserved *****

258          KK  CP038A
259          KM   Combine routed hydrograph from CP036 with runoff hydrograph from 038.
260          KM   This combination was made for use in the hydraulic modeling of a
261          KM   tributary to Rawhide Wash.
262          HC       2
             * DDM   ***** Preserved *****

263          KK     032
264          KM   SUB-BASIN 032
265          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
266          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
267          KM     L =  .40  Kb = .062  Adj. Slope =  100.0
268          BA    .033
269          LG    .150    .350   4.550    .310   3.000
270          UC    .233    .247
271          UA       0       3       5       8      12      20      43      75      90      96
272          UA     100
             * DDM   ***** Preserved *****

273          KK   CP038
274          KM   Combine hydrograph from CP038a with runoff hydrographs from 032.
275          KM   This combination was made for use in the hydraulic modeling of a
276          KM   tributary to Rawhide Wash.
277          HC       3
             * DDM   ***** Preserved *****

278          KK  R040-1
279          KM   Route combined hydrograph from CP038 to CP040
280          RS       4    FLOW      -1
281          RC   0.045   0.035   0.045    3775   0.019
282          RX      47      75     224     433     448     523     609     678
283          RY    2540    2536    2530    2530    2528    2528    2534    2540
             * DDM   ***** Preserved *****

284          KK     040
285          KM   SUB-BASIN 040
286          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
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287          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
288          KM     L = 1.56  Kb = .048  Adj. Slope =  245.0
289          BA    .328
290          LG    .150    .380   5.600    .190   5.000
291          UC    .317    .278
                                   HEC-1 INPUT                                          PAGE  9
1
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

292          UA       0       3       5       8      12      20      43      75      90      96
293          UA     100
             * DDM   ***** Preserved *****

294          KK   CP040
295          KM   Combine routed hydrographs from CP038 with runoff hydrograph from 040
296          HC       2
             * DDM   ***** Preserved *****

297          KK  R042-1
298          KM   Route combined hydrograph from CP040 to CP042
299          RS       2    FLOW      -1
300          RC   0.045   0.035   0.045    2074   0.018
301          RX     263     349     381     450     522     756     847     973
302          RY    2486    2482    2476    2482    2476    2476    2482    2486
             *
             * DDM   ***** Preserved *****

303          KK     041
304          KM   SUB-BASIN 041
305          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
306          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
307          KM     L =  .69  Kb = .058  Adj. Slope =  133.0
308          BA    .064
309          LG    .150    .350   4.800    .260   3.000
310          UC    .271    .309
311          UA       0       3       5       8      12      20      43      75      90      96
312          UA     100
             * DDM   ***** Preserved *****

313          KK     042
314          KM   SUB-BASIN 042
315          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
316          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
317          KM     L = 1.51  Kb = .048  Adj. Slope =  296.4
318          BA    .325
319          LG    .150    .400   6.000    .160   8.000
320          UC    .283    .241
321          UA       0       3       5       8      12      20      43      75      90      96
322          UA     100
             * DDM   ***** Preserved *****

323          KK   CP042
324          KM   Combine routed hydrograph from CP040 with runoff hydrographs from 041 & 042
325          HC       3
             * DDM   ***** Preserved *****

326          KK  R043-1
327          KM   Route combined hydrograph from CP040 to CP042
328          RS       7    FLOW      -1
329          RC   0.045   0.035   0.045    7504   0.017
330          RX     263     349     381     450     522     756     847     973
331          RY    2486    2482    2476    2482    2476    2476    2482    2486
             * DDM   ***** Preserved *****
                                   HEC-1 INPUT                                          PAGE 10

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

332          KK     043
333          KM   SUB-BASIN 043
334          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
335          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
336          KM     L = 1.92  Kb = .049  Adj. Slope =   99.0
337          BA    .286
338          LG    .150    .350   4.650    .290   3.000
339          UC    .538    .639
340          UA       0       3       5       8      12      20      43      75      90      96
341          UA     100
             * DDM   ***** Preserved *****

342          KK   CP043
343          KM   Combine routed hydrograph from CP042 with runoff hydrograph from 043
344          HC       2
             * DDM   ***** Preserved *****

345          KK  R046-1
346          KM   Route combined hydrograph from CP043 to CP046
347          RS       4    FLOW      -1
348          RC   0.045   0.035   0.045    2845   0.015
349          RX    9425    9601    9923    9945   10019   10043   10267   10435
350          RY    2300    2288    2288    2286    2286    2288    2288    2302
             * DDM   ***** Preserved *****

351          KK     044
352          KM   SUB-BASIN 044
353          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
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354          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
355          KM     L = 2.99  Kb = .039  Adj. Slope =  240.0
356          BA   1.400
357          LG    .150    .390   5.800    .170   5.000
358          UC    .417    .278
359          UA       0       3       5       8      12      20      43      75      90      96
360          UA     100
             * DDM   ***** Preserved *****

361          KK  R046-2
362          KM   Route runoff hydrograph from 044 to CP046
363          RS       4    FLOW      -1
364          RC   0.045   0.035   0.045    1882   0.016
365          RX    9425    9601    9923    9945   10019   10043   10267   10435
366          RY    2300    2288    2288    2286    2286    2288    2288    2302
             * DDM   ***** Preserved *****

367          KK     046
368          KM   SUB-BASIN 046
369          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
370          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
371          KM     L =  .67  Kb = .055  Adj. Slope =  101.0
372          BA    .111
373          LG    .150    .360   5.100    .230   3.000
374          UC    .287    .236
375          UA       0       3       5       8      12      20      43      75      90      96
                                          HEC-1 INPUT                                          PAGE 11

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

376          UA     100
             * DDM   ***** Preserved *****

377          KK   CP046
378          KM   Combine routed hydrographs from CP042 and 044 with runoff hydrograph from
379          KM   046
380          HC       3
             * DDM   ***** Preserved *****

381          KK  R051-1
382          KM   Route combined hydrograph from CP046 to CP051
383          RS       2    FLOW      -1
384          RC   0.045   0.035   0.045    1557   0.017
385          RX    9822    9952    9976    9977   10023   10046   10356   10509
386          RY    2275    2261    2262    2260    2260    2263    2264    2275
             * DDM   ***** Preserved *****

387          KK     048
388          KM   SUB-BASIN 048
389          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
390          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
391          KM     L =  .43  Kb = .059  Adj. Slope =  112.0
392          BA    .056
393          LG    .150    .350   4.900    .250   3.000
394          UC    .225    .186
395          UA       0       3       5       8      12      20      43      75      90      96
396          UA     100
             * DDM   ***** Preserved *****

397          KK     051
398          KM   SUB-BASIN 051
399          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
400          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
401          KM     L = 1.41  Kb = .052  Adj. Slope =  128.0
402          BA    .164
403          LG    .150    .390   6.200    .150   3.000
404          UC    .400    .494
405          UA       0       3       5       8      12      20      43      75      90      96
406          UA     100
             * DDM   ***** Preserved *****

407          KK   CP051
408          KM   Combine routed hydrograph from CP046 with runoff hydrographs from 048 and 051
409          HC       3
             * DDM   ***** Preserved *****

410          KK  R053-1
411          KM   Route combined hydrograph from CP051 to CP053
412          RS       1    FLOW      -1
413          RC   0.045   0.035   0.045    1681   0.030
414          RX    9910    9935    9963    9987   10041   10046   10075   10085
415          RY    2249    2245    2245    2238    2238    2239    2239    2242
             * DDM   ***** Preserved *****
1                                         HEC-1 INPUT                                          PAGE 12

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

416          KK     053
417          KM   SUB-BASIN 053
418          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
419          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
420          KM     L =  .66  Kb = .056  Adj. Slope =  126.0
421          BA    .094
422          LG    .150    .370   6.600    .130   3.000
423          UC    .258    .227
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424          UA       0       3       5       8      12      20      43      75      90      96
425          UA     100
             * DDM   ***** Preserved *****

426          KK   CP053
427          KM   Combine routed hydrographs from CP051 with runoff hydrograph from 053
428          HC       2
             * DDM   ***** Preserved *****

429          KK  R055-1
430          KM   Route combined hydrograph from CP053 to CP055
431          RS       1    FLOW      -1
432          RC   0.045   0.035   0.045     784   0.019
433          RX     111     154     304     389     510     725     836     937
434          RY    2208    2202    2200    2197    2199    2200    2199    2208
             * DDM   ***** Preserved *****

435          KK     055
436          KM   SUB-BASIN 055
437          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
438          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
439          KM     L = 2.43  Kb = .047  Adj. Slope =  125.0
440          BA    .366
441          LG    .150    .400   6.000    .160   5.000
442          UC    .538    .670
443          UA       0       3       5       8      12      20      43      75      90      96
444          UA     100
             * DDM   ***** Preserved *****

445          KK   CP055
446          KM   Combine routed hydrograph from CP053 with runoff hydrograph from 055
447          HC       2
             * DDM   ***** Preserved *****

448          KK  R068-1
449          KM   Route combined hydrograph from CP055 to CP068
450          RS       2    FLOW      -1
451          RC   0.045   0.035   0.045    1728   0.017
452          RX     111     154     304     389     510     725     836     937
453          RY    2208    2202    2200    2197    2199    2200    2199    2208
             * DDM   ***** Preserved *****
                                    HEC-1 INPUT                                          PAGE 13

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

454          KK     058
455          KM   SUB-BASIN 058
456          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
457          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
458          KM     L = 2.86  Kb = .038  Adj. Slope =  120.0
459          BA   1.756
460          LG    .150    .400   6.000    .160   4.000
461          UC    .525    .304
462          UA       0       3       5       8      12      20      43      75      90      96
463          UA     100
             * DDM   ***** Preserved *****

464          KK  R064-1
465          KM   Route runoff hydrograph from 058
466          RS       7    FLOW      -1
467          RC   0.045   0.035   0.045    7694   0.023
468          RX       0      76     102     111     117     118     168     205
469          RY    2323    2321    2319    2319    2320    2321    2323    2325
             * DDM   ***** Preserved *****

470          KK     060
471          KM   SUB-BASIN 060
472          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
473          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
474          KM     L = 3.39  Kb = .043  Adj. Slope =  152.0
475          BA    .778
476          LG    .150    .390   6.200    .140   6.000
477          UC    .583    .623
478          UA       0       3       5       8      12      20      43      75      90      96
479          UA     100
             * DDM   ***** Preserved *****

480          KK  R062-1
481          KM   Route runoff hydrograph from 060
482          RS       1    FLOW      -1
483          RC   0.045   0.035   0.045     441   0.018
484          RX       0      20      38      41      45      60      94     128
485          RY  2328.5    2328    2327    2327    2326    2326    2327  2328.5
             * DDM   ***** Preserved *****

486          KK     062
487          KM   SUB-BASIN 062
488          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
489          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
490          KM     L = 2.26  Kb = .043  Adj. Slope =  158.0
491          BA    .730
492          LG    .150    .400   6.000    .150   8.000
493          UC    .438    .340
494          UA       0       3       5       8      12      20      43      75      90      96
495          UA     100
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```
                 * DDM    ***** Preserved *****
1                                    HEC-1 INPUT                                                    PAGE 14
LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 496             KK   CP062
 497             KM   Combine routed hydrograph from 060 with runoff hydrograph from 062
 498             HC       2
                 *
                 * Currently flow splits at this location.  With the Rawhide Wash Dam project
                 * these flows will be cut off and routed to the dam site.  The routing in this
                 * model indicates this.
                 *
                 * DDM    ***** Preserved *****

 499             KK  R064-2
 500             KM   Route combined hydrograph from CP062
 501             RS       1    FLOW      -1
 502             RC   0.045   0.035   0.045    1554   0.024
 503             RX       0      17      23      73      83      90      99     107
 504             RY    2316    2316    2315    2315    2316    2317    2318    2319
                 * DDM    ***** Preserved *****

 505             KK     064
 506             KM   SUB-BASIN 064
 507             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 508             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 509             KM     L = 1.80  Kb = .046  Adj. Slope =  149.0
 510             BA    .473
 511             LG    .150    .390   6.200    .150   5.000
 512             UC    .404    .332
 513             UA       0       3       5       8      12      20      43      75      90      96
 514             UA     100
                 * DDM    ***** Preserved *****

 515             KK   CP064
 516             KM   Combine routed hydrographs from 058 and CP062 with runoff hydrograph from
 517             KM   064
 518             HC       3
                 * DDM    ***** Preserved *****

 519             KK  R066-1
 520             KM   Route combined hydrograph from CP064
 521             RS       1    FLOW      -1
 522             RC   0.045   0.035   0.045     934   0.021
 523             RX       0      31      66     104     111     121     129     149
 524             RY    2281    2281    2280    2280    2281    2282    2283    2284
                 * DDM    ***** Preserved *****

 525             KK     066
 526             KM   SUB-BASIN 066
 527             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 528             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 529             KM     L =  .18  Kb = .072  Adj. Slope =  122.0
 530             BA    .006
 531             LG    .150    .350   4.200    .360   3.000
 532             UC    .158    .224
 533             UA       0       3       5       8      12      20      43      75      90      96
 534             UA     100
                 * DDM    ***** Preserved *****
1                                    HEC-1 INPUT                                                    PAGE 15
LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 535             KK   CP066
 536             KM   Combine routed hydrograph from CP064 with runoff hydrograph from 066
 537             HC       2
                 *
                 * Currently flow splits at this location.  With the Rawhide Wash Dam project
                 * these flows will be cut off and routed to the dam site.  The routing in this
                 * model indicates this.
                 *
                 * DDM    ***** Preserved *****

 538             KK  R068-2
 539             KM   Route combined hydrograph from CP066
 540             RS       4    FLOW      -1
 541             RC   0.045   0.035   0.045    3234   0.025
 542             RX     198     224     270     283     684     688     721     769
 543             RY    2228    2227    2227  2226.5  2226.5    2227    2227    2228
                 * DDM    ***** Preserved *****

 544             KK     068
 545             KM   SUB-BASIN 068
 546             KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 547             KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
 548             KM     L = 1.05  Kb = .050  Adj. Slope =  133.0
 549             BA    .248
 550             LG    .150    .360   5.100    .220   3.000
 551             UC    .321    .241
 552             UA       0       3       5       8      12      20      43      75      90      96
 553             UA     100
                 * DDM    ***** Preserved *****
```

```
554          KK   CP068
555          KM   Combine routed hydrographs from CP055 and CP066 with runoff hydrograph from
556          KM   068
557          HC       3
             * DDM   ***** Preserved *****

558          KK  R070-1
559          KM   Route combined hydrograph from CP068
560          RS       7    FLOW      -1
561          RC   0.045   0.035   0.045    7672   0.019
562          RX    65.2   145.6   307.4   320.0   550.3   564.7   809.8   963.5
563          RY    2130    2127    2127  2125.5  2125.5    2124    2124    2130
             * DDM   ***** Preserved *****

564          KK     070
565          KM   SUB-BASIN 070
566          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
567          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .928
568          KM     L = 2.68  Kb = .043  Adj. Slope =  131.0
569          BA    .794
570          LG    .170    .340   4.500    .310   3.000
571          UC    .550    .478
572          UA       0       3       5       8      12      20      43      75      90      96
573          UA     100
             * DDM   ***** Preserved *****
                                        HEC-1 INPUT                                          PAGE 16

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

574          KK   CP070
575          KM   Combine routed hydrograph from CP068 with runoff hydrograph from 070
576          HC       2
             *
             * Notice:
             * This document, together with the concepts and designs presented herein, as an
             * instrument of service, is intended for the specific purpose and client for
             * which it was prepared.  Reuse of and improper reliance on this document
             * without written authorization and adaptation by Kimley-Horn and Associates,
             * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
             *
577          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

  5          005
              V
              V
 29       R010-1
              .
              .
 35           .         010
              .           .
              .           .
 45        CP010............
              V
              V
 48       R012-1
              .
              .
 54           .         012
              .           .
              .           .
 64        CP012............
              .
              .
 69           .-------> 012OUT
 67          D012
              V
              V
 72       R030-1
              .
              .
 78           .         030
              .           .
              .           .
 88       CP030A...........
              .
              .
 93           .         015
              .           V
              .           V
103           .      R022-1
              .           .
              .           .
109           .           .         017
              .           .           .
              .           .           .
119           .      CP022A...........
              .           .
              .           .
124           .           .         020
```

```
                .           .           V
                .           .           V
134             .           .      R022-2
                .           .           .
                .           .           .
140             .           .           .        022
                .           .           .          .
                .           .           .          .
150             .           .      CP022B............
                .           .           .
                .           .           .
155             .       CP022............
                .           .
                .           .
160             .           .         024
                .           .           V
                .           .           V
170             .           .      R026-1
                .           .           .
                .           .           .
176             .           .           .        026
                .           .           .          .
                .           .           .          .
186             .           .      CP026A............
                .           .           .
                .           .           .
191             .       CP026............
                .           .           V
                .           .           V
196             .       R030-2
                .           .
                .           .
202         CP030............
                V
                V
207         R038-1
                .
                .
213             .         034
                .           V
                .           V
223             .       R036-1
                .           .
                .           .
229             .           .         036
                .           .           .
                .           .           .
239             .       CP036............
                .           .           V
                .           .           V
242             .       R038-2
                .           .
                .           .
248             .           .         038
                .           .           .
                .           .           .
258             .       CP038A...........
                .           .
                .           .
263             .           .         032
                .           .           .
                .           .           .
273         CP038........................
                V
                V
278         R040-1
                .
                .
284             .         040
                .           .
                .           .
294         CP040............
                V
                V
297         R042-1
                .
                .
303             .         041
                .           .
                .           .
313             .           .         042
                .           .           .
                .           .           .
323         CP042........................
                V
                V
326         R043-1
                .
                .
332             .         043
                .           .
                .           .
342         CP043............
                V
                V
345         R046-1
```

```
          .
          .
351       .         044
          .           V
          .           V
361       .      R046-2
          .           .
          .           .
367       .           .         046
          .           .           .
          .           .           .
377    CP046.......................
          V
          V
381   R051-1
          .
          .
387       .         048
          .           .
          .           .
397       .           .         051
          .           .           .
          .           .           .
407    CP051.......................
          V
          V
410   R053-1
          .
          .
416       .         053
          .           .
          .           .
426    CP053............
          V
          V
429   R055-1
          .
          .
435       .         055
          .           .
          .           .
445    CP055............
          V
          V
448   R068-1
          .
          .
454       .         058
          .           V
          .           V
464       .      R064-1
          .           .
          .           .
470       .           .         060
          .           .           V
          .           .           V
480       .           .      R062-1
          .           .           .
          .           .           .
486       .           .           .         062
          .           .           .           .
          .           .           .           .
496       .           .       CP062............
          .           .           V
          .           .           V
499       .           .      R064-2
          .           .           .
          .           .           .
505       .           .           .         064
          .           .           .           .
          .           .           .           .
515       .       CP064........................
          .           V
          .           V
519       .      R066-1
          .           .
          .           .
525       .           .         066
          .           .           .
          .           .           .
535       .       CP066............
          .           V
          .           V
538       .      R068-2
          .           .
          .           .
544       .           .         068
          .           .           .
          .           .           .
554    CP068.......................
          V
          V
558   R070-1
          .
          .
564       .         070
```

```
                .          .
                .          .
 574        CP070............

***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUL   1997                *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   20OCT99  TIME  17:10:39   *
*                                       *
*****************************************
```

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

DDM MCUHP1 Upper Rawhide Wash - Existing Conditions 100 yr, 24 hr storm

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

   IT          HYDROGRAPH TIME DATA
                      NMIN          2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ        750  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      2    0  ENDING DATE
                    NDTIME       0058  ENDING TIME
                     ICENT         19  CENTURY MARK

               COMPUTATION INTERVAL     .03 HOURS
                    TOTAL TIME BASE   24.97 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT
```

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	005	484.	12.30	69.	18.	17.	.42		
ROUTED TO	R010-1	480.	12.33	69.	18.	17.	.42	2867.40	12.33
HYDROGRAPH AT	010	395.	12.30	54.	14.	13.	.34		
2 COMBINED AT	CP010	867.	12.33	123.	32.	30.	.75		
ROUTED TO	R012-1	832.	12.47	123.	31.	30.	.75	2791.28	12.47
HYDROGRAPH AT	012	344.	12.30	46.	12.	11.	.30		
2 COMBINED AT	CP012	1111.	12.43	169.	43.	42.	1.05		
DIVERSION TO	012OUT	423.	12.43	58.	15.	14.	1.05		
HYDROGRAPH AT	D012	688.	12.43	111.	28.	27.	1.05		
ROUTED TO	R030-1	599.	13.17	111.	28.	27.	1.05	2680.62	13.17
HYDROGRAPH AT	030	297.	12.43	60.	16.	15.	.35		
2 COMBINED AT	CP030A	731.	13.17	170.	44.	43.	1.40		
HYDROGRAPH AT	015	1766.	12.33	205.	52.	50.	1.27		

ROUTED TO	R022-1	1674.	12.50	205.	52.	50.	1.27	2728.88	12.50
HYDROGRAPH AT	017	286.	12.27	36.	9.	9.	.22		
2 COMBINED AT	CP022A	1875.	12.47	241.	62.	59.	1.48		
HYDROGRAPH AT	020	1458.	12.20	139.	38.	36.	.76		
ROUTED TO	R022-2	1293.	12.40	139.	38.	36.	.76	2688.05	12.40
HYDROGRAPH AT	022	340.	12.40	70.	18.	18.	.38		
2 COMBINED AT	CP022B	1633.	12.40	209.	56.	54.	1.14		
2 COMBINED AT	CP022	3445.	12.43	449.	118.	113.	2.63		
HYDROGRAPH AT	024	2481.	12.10	186.	51.	49.	1.02		
ROUTED TO	R026-1	2173.	12.27	186.	51.	49.	1.02	2688.34	12.27
HYDROGRAPH AT	026	309.	12.27	57.	16.	16.	.27		
2 COMBINED AT	CP026A	2481.	12.27	243.	67.	64.	1.29		
2 COMBINED AT	CP026	5412.	12.40	692.	185.	178.	3.91		
ROUTED TO	R030-2	5366.	12.43	692.	185.	178.	3.91	2597.13	12.43
2 COMBINED AT	CP030	5666.	12.43	861.	229.	220.	5.32		
ROUTED TO	R038-1	5638.	12.47	861.	229.	220.	5.32	2576.58	12.47
HYDROGRAPH AT	034	444.	12.27	56.	16.	15.	.30		
ROUTED TO	R036-1	415.	12.47	56.	16.	15.	.30	2643.06	12.47
HYDROGRAPH AT	036	463.	12.17	51.	14.	14.	.25		
2 COMBINED AT	CP036	648.	12.40	107.	30.	29.	.55		
ROUTED TO	R038-2	647.	12.40	107.	30.	29.	.55	2573.45	12.40
HYDROGRAPH AT	038	323.	12.17	35.	10.	9.	.18		
2 COMBINED AT	CP038A	855.	12.30	142.	40.	38.	.73		
HYDROGRAPH AT	032	55.	12.13	5.	1.	1.	.03		
3 COMBINED AT	CP038	6445.	12.43	1007.	270.	260.	6.08		
ROUTED TO	R040-1	6379.	12.53	1007.	270.	260.	6.08	2531.46	12.53
HYDROGRAPH AT	040	529.	12.20	53.	14.	13.	.33		
2 COMBINED AT	CP040	6600.	12.50	1060.	284.	273.	6.41		
ROUTED TO	R042-1	6557.	12.57	1060.	284.	273.	6.41	2478.44	12.57

HYDROGRAPH AT	041	97.	12.17	10.	2.	2.	.06		
HYDROGRAPH AT	042	579.	12.17	55.	15.	14.	.32		
3 COMBINED AT	CP042	6755.	12.53	1125.	301.	289.	6.80		
ROUTED TO	R043-1	6555.	12.73	1124.	300.	289.	6.80	2478.48	12.73
HYDROGRAPH AT	043	253.	12.37	42.	11.	10.	.29		
2 COMBINED AT	CP043	6720.	12.70	1166.	311.	299.	7.09		
ROUTED TO	R046-1	6583.	12.83	1166.	311.	299.	7.09	2289.18	12.83
HYDROGRAPH AT	044	2207.	12.27	231.	60.	58.	1.40		
ROUTED TO	R046-2	2118.	12.37	231.	60.	58.	1.40	2288.12	12.37
HYDROGRAPH AT	046	192.	12.17	17.	4.	4.	.11		
3 COMBINED AT	CP046	7150.	12.80	1412.	375.	361.	8.60		
ROUTED TO	R051-1	7079.	12.87	1412.	375.	361.	8.60	2264.70	12.87
HYDROGRAPH AT	048	108.	12.13	9.	2.	2.	.06		
HYDROGRAPH AT	051	192.	12.27	27.	7.	7.	.16		
3 COMBINED AT	CP051	7153.	12.87	1447.	384.	370.	8.82		
ROUTED TO	R053-1	7142.	12.87	1447.	384.	370.	8.82	2242.56	12.87
HYDROGRAPH AT	053	175.	12.13	16.	4.	4.	.09		
2 COMBINED AT	CP053	7157.	12.87	1463.	389.	373.	8.91		
ROUTED TO	R055-1	7136.	12.90	1463.	388.	373.	8.91	2200.63	12.90
HYDROGRAPH AT	055	338.	12.37	61.	16.	15.	.37		
2 COMBINED AT	CP055	7319.	12.90	1523.	404.	389.	9.28		
ROUTED TO	R068-1	7280.	12.93	1523.	404.	388.	9.28	2200.70	12.93
HYDROGRAPH AT	058	2569.	12.33	288.	74.	71.	1.76		
ROUTED TO	R064-1	2367.	12.53	288.	74.	71.	1.76	2323.10	12.53
HYDROGRAPH AT	060	764.	12.40	135.	35.	34.	.78		
ROUTED TO	R062-1	761.	12.43	135.	35.	34.	.78	2328.15	12.43
HYDROGRAPH AT	062	1056.	12.27	127.	34.	32.	.73		
2 COMBINED AT	CP062	1707.	12.33	261.	69.	66.	1.51		
ROUTED TO	R064-2	1694.	12.37	261.	69.	66.	1.51		

								2317.30	12.37
HYDROGRAPH AT	064	694.	12.27	80.	21.	20.	.47		
3 COMBINED AT	CP064	4244.	12.50	629.	164.	157.	3.74		
ROUTED TO	R066-1	4241.	12.50	629.	164.	157.	3.74	2283.57	12.50
HYDROGRAPH AT	066	10.	12.07	1.	0.	0.	.01		
2 COMBINED AT	CP066	4243.	12.50	630.	164.	158.	3.74		
ROUTED TO	R068-2	4181.	12.60	629.	164.	158.	3.74	2227.73	12.60
HYDROGRAPH AT	068	421.	12.20	39.	10.	10.	.25		
3 COMBINED AT	CP068	9990.	12.90	2190.	578.	555.	13.27		
ROUTED TO	R070-1	9712.	13.07	2185.	577.	554.	13.27	2126.90	13.07
HYDROGRAPH AT	070	833.	12.37	115.	29.	28.	.79		
2 COMBINED AT	CP070	9940.	13.07	2293.	606.	583.	14.06		

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

D.8 REGRESSION VERIFICATION OF HEC-1

This section contains the regression analysis output.

The primary peak discharge was calculated using HEC-1.

Table D.8.1
With areal reduction factor for entire watershed

Basin Name	Basin Area	HEC-1 $Q_{100,24}$	Q_{100}/A
	[mi^2]	[cfs]	[cfs/mi^2]
Basin 005	0.42	484	1152
Basin 010	0.34	395	1162
CP010	0.75	867	1156
Basin 012	0.30	344	1147
CP012	1.05	1111	1058
Basin 030	0.35	297	849
CP030A	1.40	731	522
Basin 015	1.27	1766	1391
Basin 017	0.22	286	1300
CP022A	1.48	1875	1267
Basin 020	0.76	1458	1918
Basin 022	0.38	340	895
CP022B	1.14	1633	1432
CP022	2.62	3445	1315
Basin 024	1.02	2481	2432
Basin 026	0.27	309	1144
CP026A	1.29	2481	1923
CP026	3.91	5412	1384
CP030	5.32	5666	1065
Basin 034	0.30	444	1480
Basin 036	0.25	463	1852
CP036	0.55	648	1178
Basin 038	0.18	323	1794
CP038A	0.73	855	1171
Basin 032	0.03	55	1833
CP038	6.08	6445	1060
Basin 040	0.33	529	1603
CP040	6.41	6600	1030
Basin 041	0.06	97	1617
Basin 042	0.32	579	1809
CP042	6.79	6755	995
Basin 043	0.29	253	872
CP043	7.08	6720	949
Basin 044	1.40	2207	1576
Basin 046	0.11	191	1736
CP046	8.59	7150	832
Basin 048	0.06	108	1800
Basin 051	0.16	192	1200
CP051	8.81	7153	812
Basin 053	0.09	175	1944
CP053	8.91	7157	803
Basin 055	0.37	338	914
CP055	9.27	7319	790
Basin 058	1.76	2569	1460
Basin 060	0.78	764	979
Basin 062	0.73	1056	1447
CP062	1.51	1707	1130
Basin 064	0.47	694	1477
CP064	3.74	4244	1135
Basin 066	0.01	10	1000
CP066	3.74	4243	1134
Basin 068	0.25	421	1684
CP068	13.27	9990	753
Basin 070	0.79	833	1054
CP070	14.06	9940	707

Table D.8.2
With no areal reduction factor for upper reaches

Basin Name	Basin Area	HEC-1 $Q_{100,24}$	Q_{100}/A
	[mi^2]	[cfs]	[cfs/mi^2]
Basin 005	0.42	531	1264
Basin 010	0.34	434	1276
CP010	0.75	952	1269
Basin 012	0.30	379	1263
CP012	1.05	1226	1168
Basin 030	0.35	327	934
CP030A	1.40	821	586
Basin 015	1.27	1940	1528
Basin 017	0.22	313	1423
CP022A	1.48	2069	1398
Basin 020	0.76	1592	2095
Basin 022	0.38	373	982
CP022B	1.14	1789	1569
CP022	2.62	3780	1443
Basin 024	1.02	2702	2649
Basin 026	0.27	337	1248
CP026A	1.29	2751	2133
CP026	3.91	5818	1488
CP030	5.32	6134	1153
Basin 034	0.30	485	1617
Basin 036	0.25	504	2016
CP036	0.55	730	1327
Basin 038	0.18	353	1961
CP038A	0.73	958	1312
Basin 032	0.03	60	2000
CP038	6.08	7031	1156
Basin 040	0.33	581	1761
CP040	6.41	7225	1127
Basin 041	0.06	106	1767
Basin 042	0.32	634	1981
CP042	6.79	7422	1093
Basin 043	0.29	280	966
CP043	7.08	7423	1048
Basin 044	1.40	2420	1729
Basin 046	0.11	211	1918
CP046	8.59	7950	925
Basin 048	0.06	118	1967
Basin 051	0.16	211	1319
CP051	8.81	8009	909
Basin 053	0.09	192	2133
CP053	8.91	8015	900
Basin 055	0.37	372	1005
CP055	9.27	8212	886
Basin 058	1.76	2819	1602
Basin 060	0.78	839	1076
Basin 062	0.73	1157	1585
CP062	1.51	1873	1240
Basin 064	0.47	761	1619
CP064	3.74	4752	1271
Basin 066	0.01	11	1100
CP066	3.74	4750	1270
Basin 068	0.25	462	1848
CP068	13.27	11317	853
Basin 070	0.79	923	1168
CP070	14.06	11282	802

Verification with USGS Data for Arizona

1. The 100-year secondary peak discharge estimate by equation 10-1 and Qmax by equation 10-2.

Table D.8.3

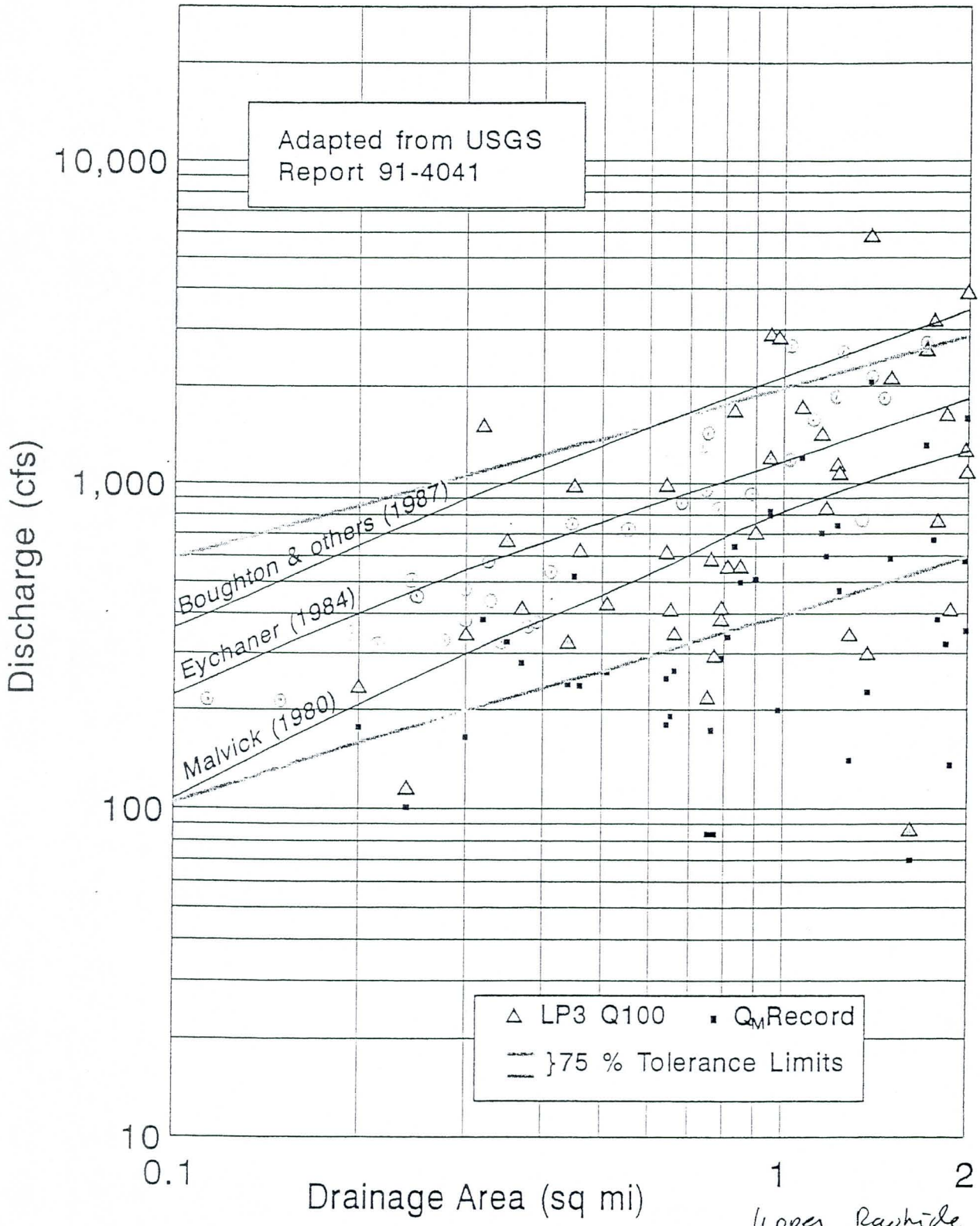
Basin Name	Basin Area	HEC-1 Q_{100}	USGS Q_{100}	USGS Q_{MAX}
	[mi^2]	[cfs]	[cfs]	[cfs]
Basin 005	0.42	531	532	216
Basin 010	0.34	434	475	190
CP010	0.75	952	728	310
Basin 012	0.30	379	444	175
CP012	1.05	1226	873	381
Basin 030	0.35	327	482	193
CP030A	1.40	821	1019	456
Basin 015	1.27	1940	967	429
Basin 017	0.22	313	375	145
CP022A	1.48	2069	1050	472
Basin 020	0.76	1592	733	312
Basin 022	0.38	373	504	203
CP022B	1.14	1789	912	401
CP022	2.62	3780	1430	672
Basin 024	1.02	2702	859	375
Basin 026	0.27	337	419	164
CP026A	1.29	2751	975	433
CP026	3.91	5818	1775	862
CP030	5.32	6134	2096	1043
Basin 034	0.30	485	444	175
Basin 036	0.25	504	402	157
CP036	0.55	730	615	255
Basin 038	0.18	353	337	128
CP038A	0.73	958	717	304
Basin 032	0.03	60	128	42
CP038	6.08	7031	2253	1133
Basin 040	0.33	581	467	186
CP040	6.41	7225	2318	1171
Basin 041	0.06	106	186	65
Basin 042	0.32	634	459	183
CP042	6.79	7422	2391	1213
Basin 043	0.29	280	436	172
CP043	7.08	7423	2446	1245
Basin 044	1.40	2420	1019	456
Basin 046	0.11	211	258	94
CP046	8.59	7950	2715	1404
Basin 048	0.06	118	186	65
Basin 051	0.16	211	316	119
CP051	8.81	8009	2752	1426
Basin 053	0.09	192	232	83
CP053	8.91	8015	2769	1436
Basin 055	0.37	372	497	200
CP055	9.27	8212	2829	1472
Basin 058	1.76	2819	1153	525
Basin 060	0.78	839	743	317
Basin 062	0.73	1157	717	304
CP062	1.51	1873	1062	478
Basin 064	0.47	761	565	232
CP064	3.74	4752	1733	838
Basin 066	0.01	11	71	21
CP066	3.74	4750	1733	838
Basin 068	0.25	462	402	157
CP068	13.27	11317	3434	1838
Basin 070	0.79	923	748	320
CP070	14.06	11282	3543	1905

2. Plot the 100-year primary peak discharge (HEC-1) estimate on the copy of Figures 10-3 to 10-6.

See attached figures.

FIGURE 10-3

100-YEAR PEAK DISCHARGE BY LP3 ANALYSIS (LP3 Q100) AND MAXIMUM RECORDED DISCHARGE (Q_M RECORD) vs. DRAINAGE AREA FOR 0.1 TO 2.0 SQUARE MILES



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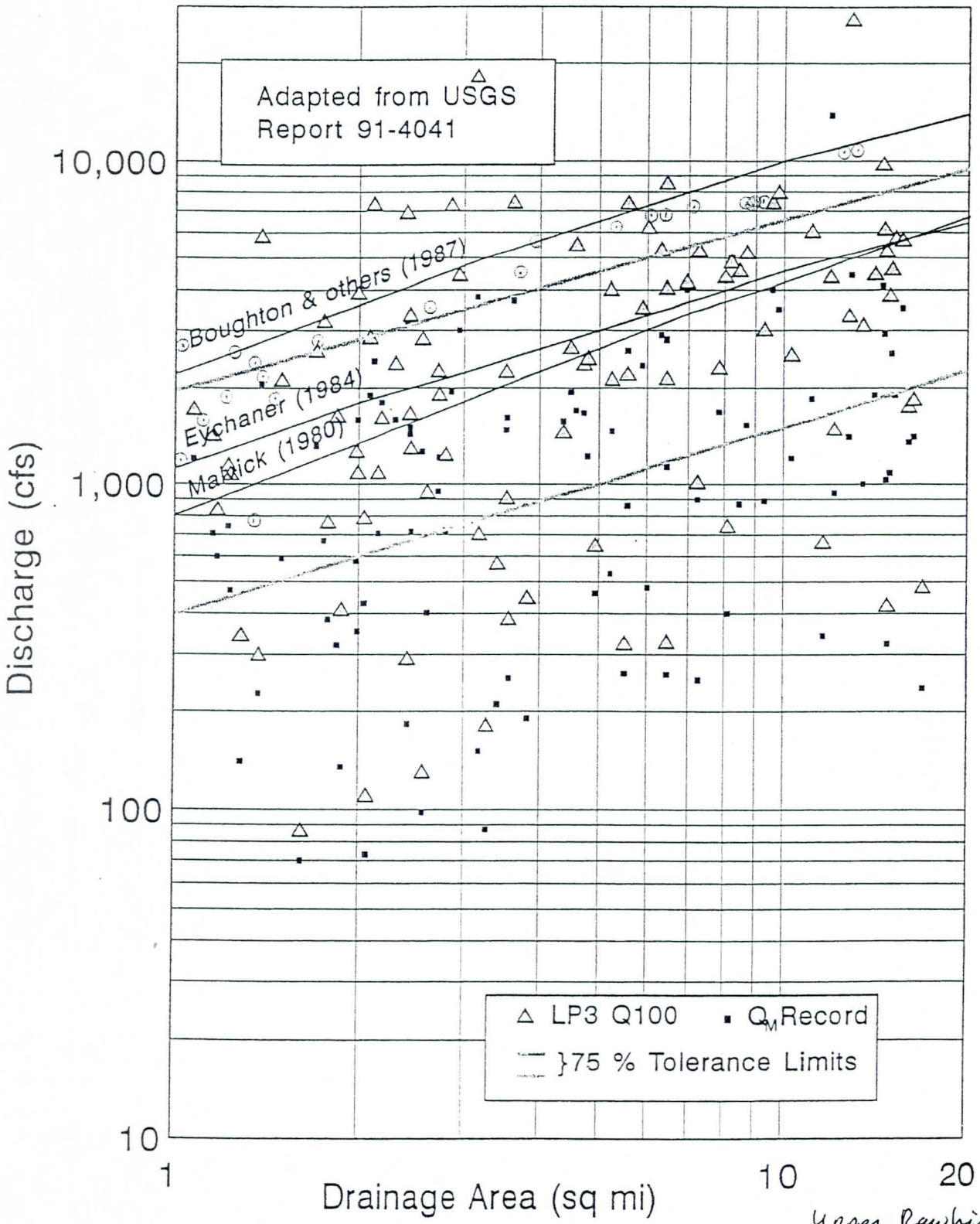
(4)

FIGURE 10-4

100-YEAR PEAK DISCHARGE BY LP3 ANALYSIS (LP3 Q100) AND MAXIMUM RECORDED DISCHARGE (Q_M RECORD) vs. DRAINAGE AREA FOR 1 TO 20 SQUARE MILES



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Verification with Regional Regression Equations

Table D.8.4

Basin Name	Basin Area	HEC-1 Q_{100}	Mean Basin Elevation
	[mi^2]	[cfs]	[ft]
Basin 005	0.42	531	3003
Basin 010	0.34	434	2989
Basin 012	0.30	379	2872
Basin 030	0.35	327	2823
Basin 015	1.27	1940	2680
Basin 017	0.22	313	2847
Basin 020	0.76	1592	2778
Basin 022	0.38	373	2961
Basin 024	1.02	2702	2927
Basin 026	0.27	337	2702
Basin 034	0.30	485	2578
Basin 036	0.25	504	2740
Basin 038	0.18	353	2812
Basin 032	0.03	060	2878
Basin 040	0.33	581	2693
Basin 041	0.06	106	2498
Basin 042	0.32	634	2753
Basin 043	0.29	280	2417
Basin 044	1.40	2420	2680
Basin 046	0.11	211	2312
Basin 048	0.06	118	2276
Basin 051	0.16	211	2342
Basin 053	0.09	192	2272
Basin 055	0.37	372	2365
Basin 058	1.76	2819	2636
Basin 060	0.78	839	2588
Basin 062	0.73	1157	2502
Basin 064	0.47	761	2421
Basin 066	0.01	011	2276
Basin 068	0.25	462	2254
CP068	13.27	11317	2662
Basin 070	0.79	923	2210
CP070	14.06	11282	2588

See attached. Plotted the above values on the ADOT Curves for Regions 12 and 13.

There is no "cloud of common values" plot for Region 13 in the ADOT manual.

Verification with USGS Curves from "Methods for Estimating Magnitude and Frequency of Floods in the Southwestern United States" Open-File Report 93-419

The peak discharge values vs. drainage area are plotted on the USGS curves.

(6)

TABLE 10-6

FLOOD MAGNITUDE-FREQUENCY RELATIONS FOR THE CENTRAL ARIZONA REGION (R12)

Equation: Q, peak discharge, in cubic feet per second; AREA, drainage area, in square miles; and ELEV, mean basin elevation, in feet divided by 1,000.

Recurrence interval, in years	Equation	Average standard error of model, in percent
2	$Q = 41.1\ AREA^{0.629}$	102
5	$Q = 238\ AREA^{0.687}\ ELEV^{-0.358}$	64
10	$Q = 479\ AREA^{0.661}\ ELEV^{-0.398}$	47
25	$Q = 942\ AREA^{0.630}\ ELEV^{-0.383}$	34
50	$LOG\ Q = 7.36 - 4.17\ AREA^{-0.08} - 0.440\ LOG\ ELEV$	30
100	$LOG\ Q = 6.55 - 3.17\ AREA^{-0.11} - 0.454\ LOG\ ELEV$	31

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FIGURE 10-20

SCATTER DIAGRAM OF INDEPENDENT VARIABLES FOR R12 REGRESSION EQUATION

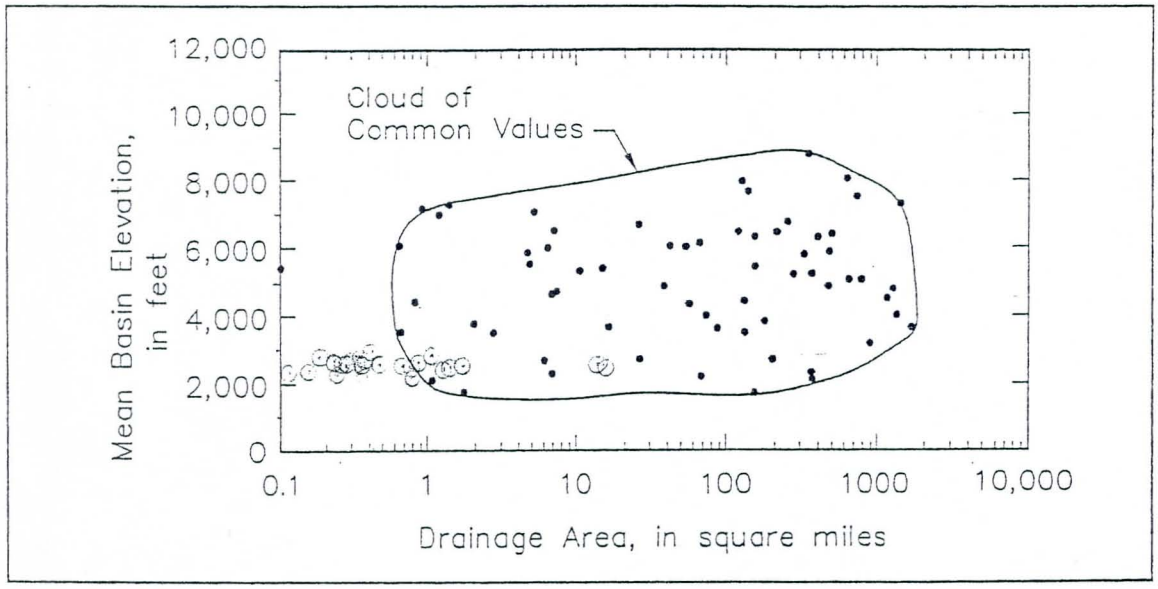
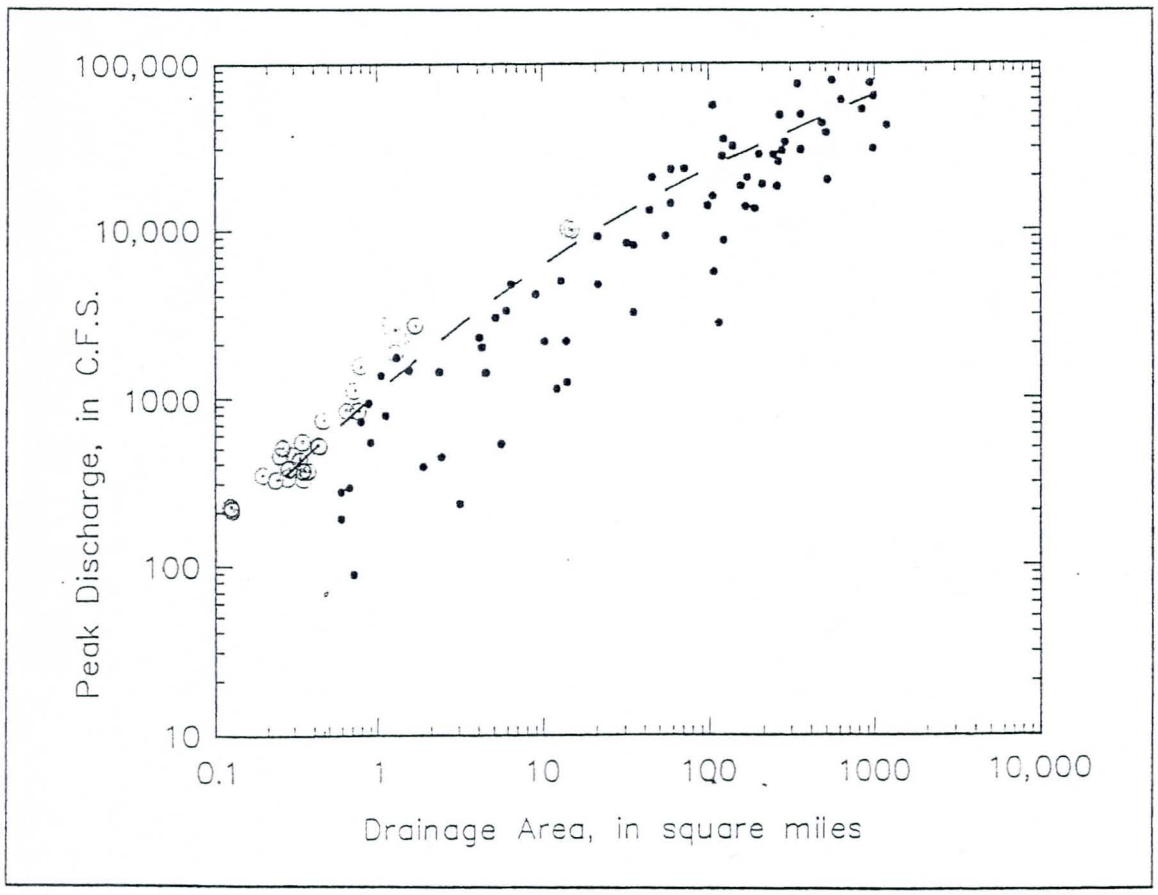


FIGURE 10-21

Q_{100} DATA POINTS AND 100-YEAR PEAK DISCHARGE RELATION FOR R12



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(8)

TABLE 10-7

FLOOD MAGNITUDE-FREQUENCY RELATIONS FOR THE SOUTHERN ARIZONA REGION (R13)

Equations: Q, peak discharge, in cubic feet per second; and AREA, drainage area, in square miles.

Recurrence interval, in years	Equation	Average standard error of model, in percent
2	$LOG\ Q = 6.38 - 4.29\ AREA^{-0.06}$	55
5	$LOG\ Q = 5.78 - 3.31\ AREA^{-0.08}$	38
10	$LOG\ Q = 5.68 - 3.02\ AREA^{-0.09}$	35
25	$LOG\ Q = 5.64 - 2.78\ AREA^{-0.10}$	37
50	$LOG\ Q = 5.57 - 2.59\ AREA^{-0.11}$	41
100	$LOG\ Q = 5.52 - 2.42\ AREA^{-0.12}$	46

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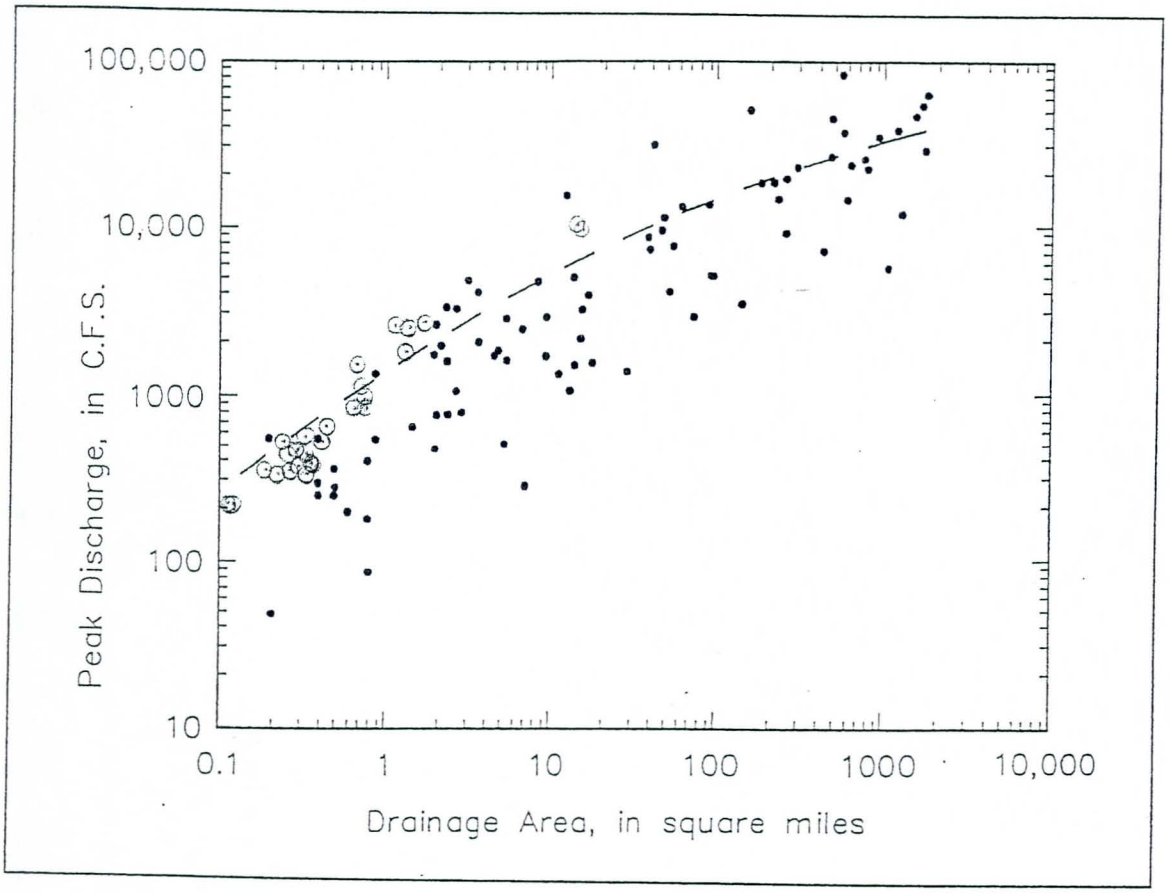
(9)

FIGURE 10-22

Q_{100} DATA POINTS AND 100-YEAR PEAK DISCHARGE RELATION FOR R13



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(10)

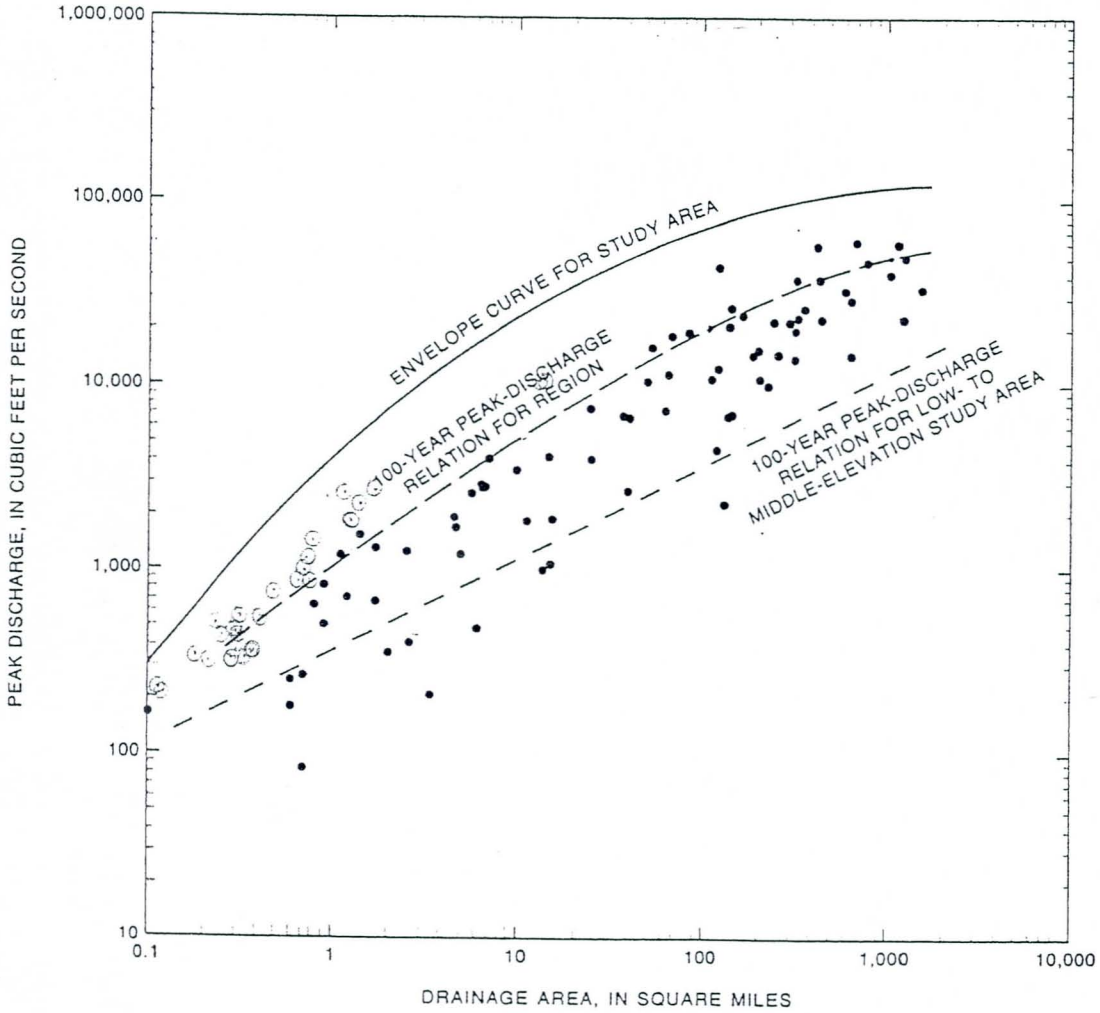

Figure 41. Relations between 100-year peak discharge and drainage area and plot of maximum peak discharge of record and drainage area for gaged sites in the Central Arizona Region 12.

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(11)

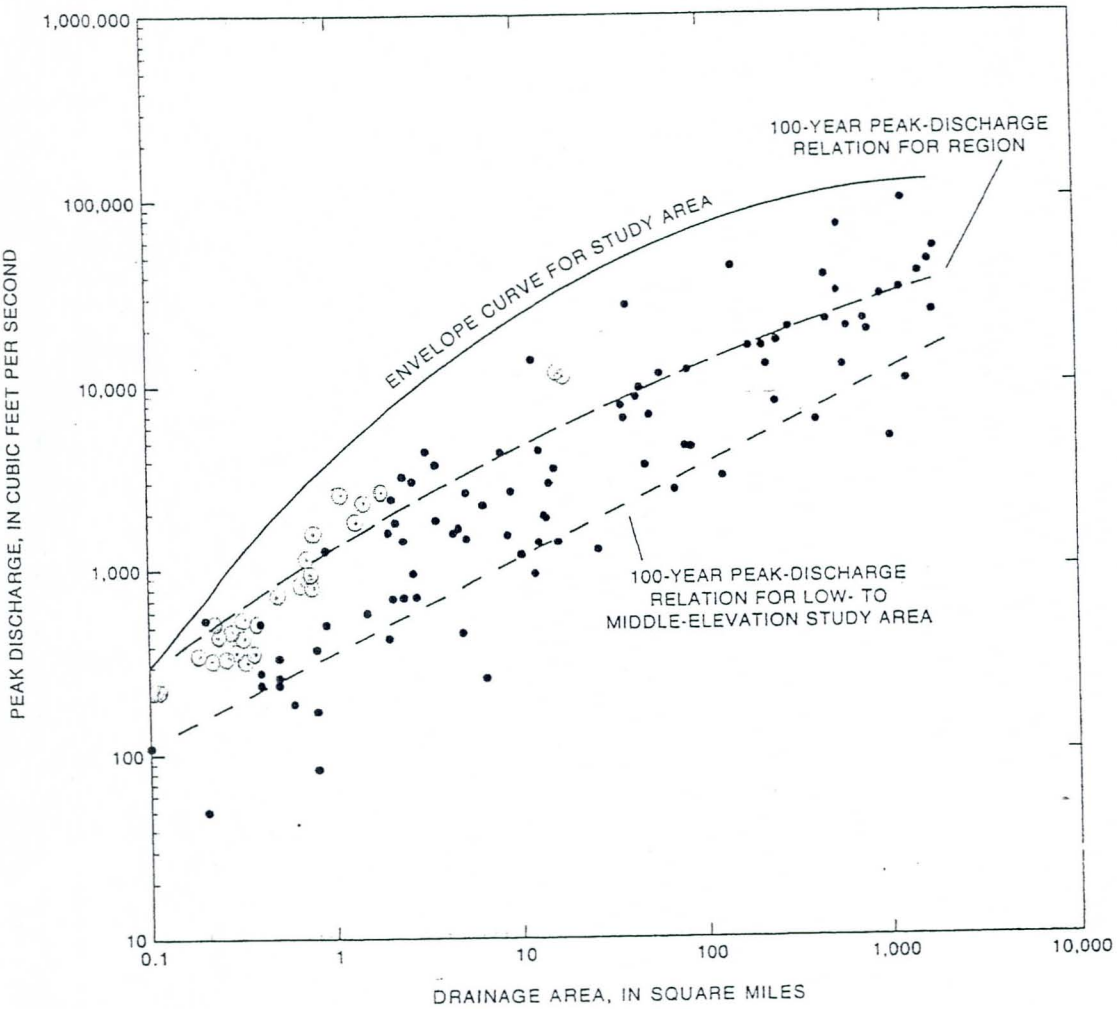

Figure 42. Relations between 100-year peak discharge and drainage area and plot of maximum peak discharge of record and drainage area for gaged sites in the Southern Arizona Region 13.

Table 17. Generalized least-squares regression equations for estimating regional flood-frequency relations for the Southern Arizona Region 13

Equation: Q, peak discharge, in cubic feet per second; and AREA, drainage area, in square miles. Data were based on 73 stations. Average number of years of systematic record is 21.

Recurrence interval, in years	Equation	Average standard error of prediction, in percent	Equivalent years of record
2	$Q=10^{(6.38-4.29AREA^{-0.06})}$	57	2.0
5	$Q=10^{(5.78-3.31AREA^{-0.08})}$	40	6.25
10	$Q=10^{(5.68-3.02AREA^{-0.09})}$	37	11.1
25	$Q=10^{(5.64-2.78AREA^{-0.10})}$	39	15.0
50	$Q=10^{(5.57-2.59AREA^{-0.11})}$	43	15.9
100	$Q=10^{(5.52-2.42AREA^{-0.12})}$	48	16.1

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APPENDIX E Hydraulic Analysis Supporting Documentation

E.1 ROUGHNESS COEFFICIENT ESTIMATION

E.2 CROSS SECTION PLOTS

E.3 EXPANSION AND CONTRACTION COEFFICIENTS

E.4 ANALYSIS OF STRUCTURES

E.5 HYDRAULIC CALCULATIONS

APPENDIX F Erosion & Sediment Transport Analysis

APPENDIX G Exhibit Maps

The following foldout exhibit maps are in this appendix.

Figure G - 1: Watershed Work Map: Subbasins and Concentration Points

Figure G - 2: Watershed Work Map: Time of Concentration Flow Paths

Figure G - 3: Watershed Work Map: Hydrograph Routing Paths

Figure G - 4: Watershed Work Map: Soils Boundaries

Figure G - 5: Watershed Work Map: Land-Use Boundaries

Figure G - 6: Watershed Work Map With Topography (1 of 5)

Figure G - 7: Watershed Work Map With Topography (2 of 5)

Figure G - 8: Watershed Work Map With Topography (3 of 5)

Figure G - 9: Watershed Work Map With Topography (4 of 5)

Figure G - 10: Watershed Work Map With Topography (5 of 5)

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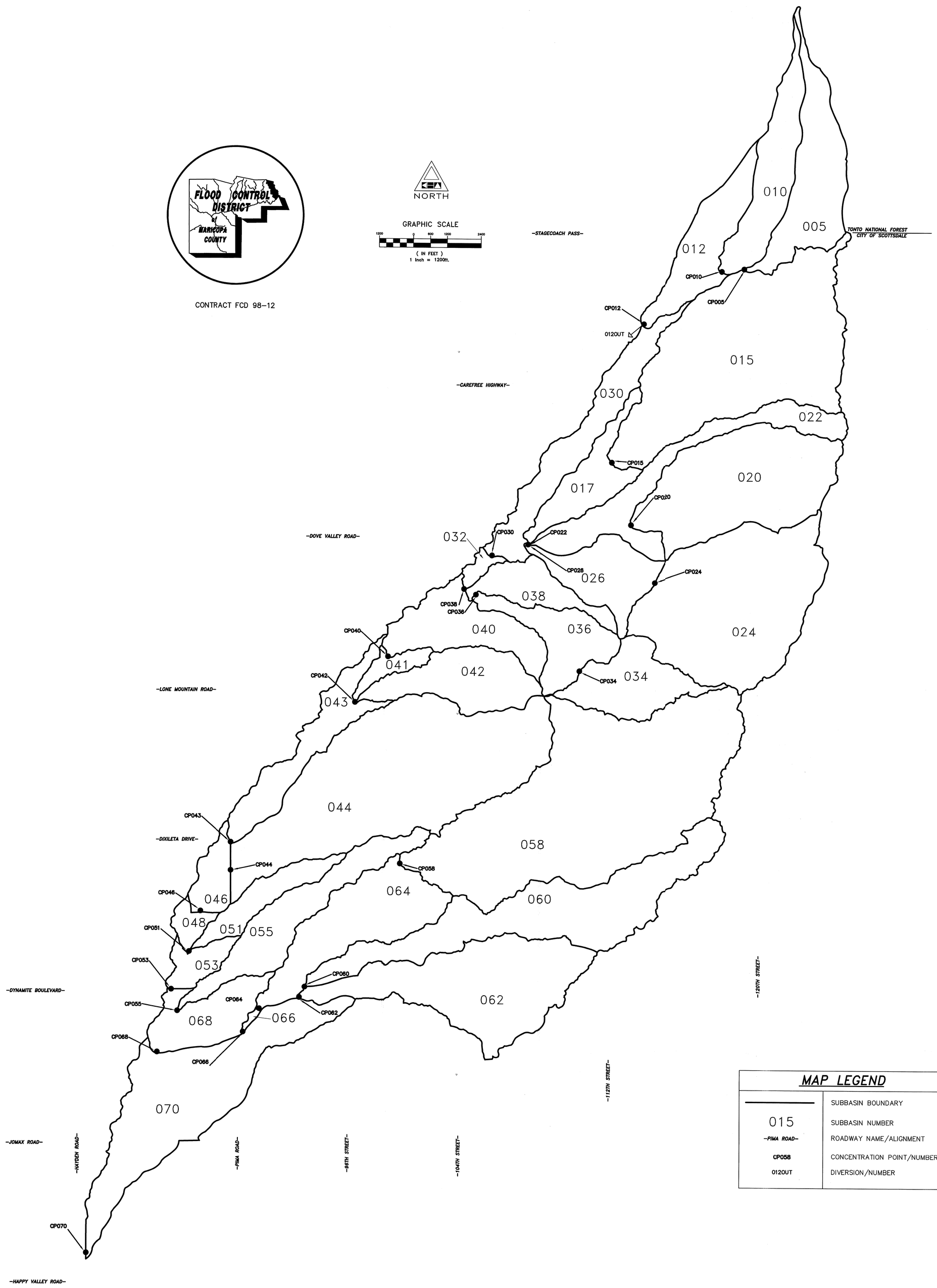
CONTRACT FCD 98-12

NORTH

GRAPHIC SCALE
1200 0 600 1200 2400
(IN FEET)
1 inch = 1200ft.



MAP LEGEND

———	SUBBASIN BOUNDARY
015	SUBBASIN NUMBER
-PIMA ROAD-	ROADWAY NAME/ALIGNMENT
CP058	CONCENTRATION POINT/NUMBER
0120UT	DIVERSION/NUMBER

UPPER RAWHIDE WASH FLOODPLAIN DELINEATION STUDY

GENERAL WATERSHED MAP

FIGURE G-1

SCALE (H): 1"=1200'
SCALE (V): NONE
DRAWN BY: OJP
DESIGNED BY: LSM
CHECKED BY: RAE
DATE: 9/30/99

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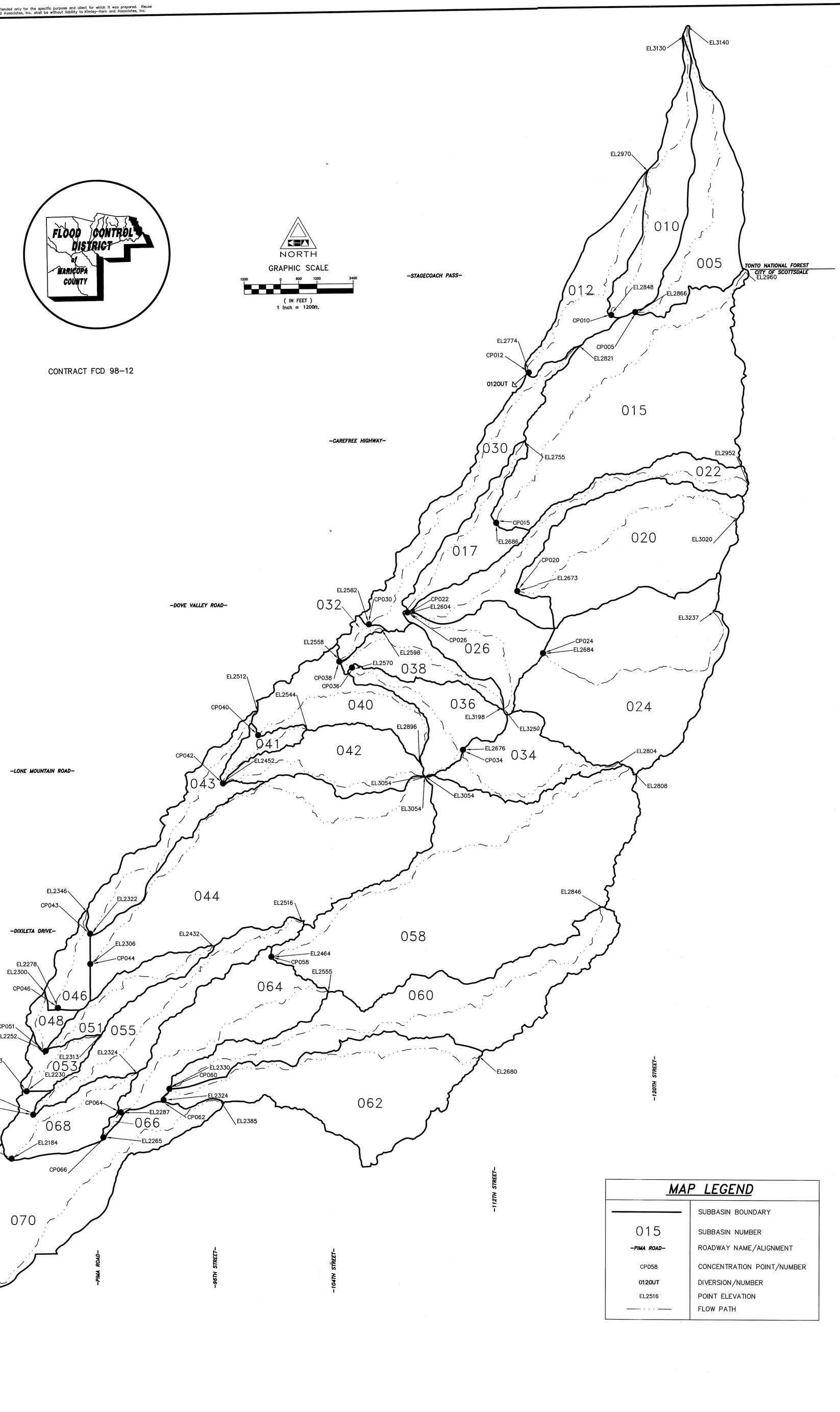
NORTH

GRAPHIC SCALE

1200 0 600 1200 2400

(IN FEET)
1 inch = 1200ft.



MAP LEGEND

———	SUBBASIN BOUNDARY
015	SUBBASIN NUMBER
-PIMA ROAD-	ROADWAY NAME/ALIGNMENT
CP058	CONCENTRATION POINT/NUMBER
0120UT	DIVERSION/NUMBER
EL2516	POINT ELEVATION
—— · · · ——	FLOW PATH

UPPER RAWHIDE WASH FLOODPLAIN DELINEATION STUDY

WATERSHED WORK MAP
TIME OF CONCENTRATION FLOW PATHS

FIGURE G-2

SCALE (H): 1"=1200'
SCALE (V): NONE
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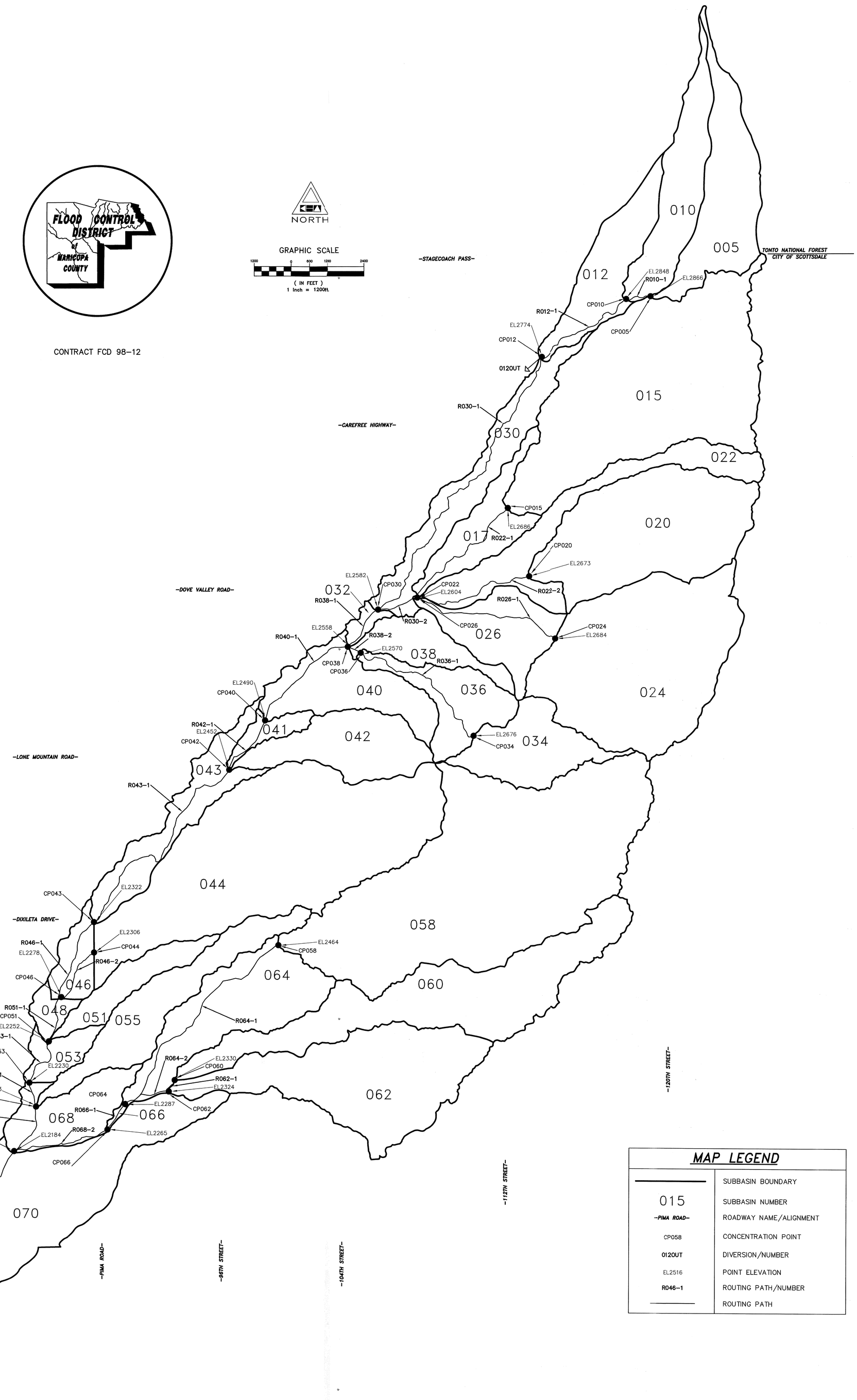
NORTH

GRAPHIC SCALE
1200 0 600 1200 2400
(IN FEET)
1 inch = 1200ft.



MAP LEGEND

———	SUBBASIN BOUNDARY
015	SUBBASIN NUMBER
-PIMA ROAD-	ROADWAY NAME/ALIGNMENT
CP058	CONCENTRATION POINT
0120UT	DIVERSION/NUMBER
EL2516	POINT ELEVATION
R046-1	ROUTING PATH/NUMBER
———	ROUTING PATH

UPPER RAWHIDE WASH FLOODPLAIN DELINEATION STUDY

WATERSHED WORK MAP
HYDROGRAPH ROUTING PATHS

FIGURE G-3

SCALE (H): 1"=1200'
SCALE (V): NONE
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NORTH

GRAPHIC SCALE
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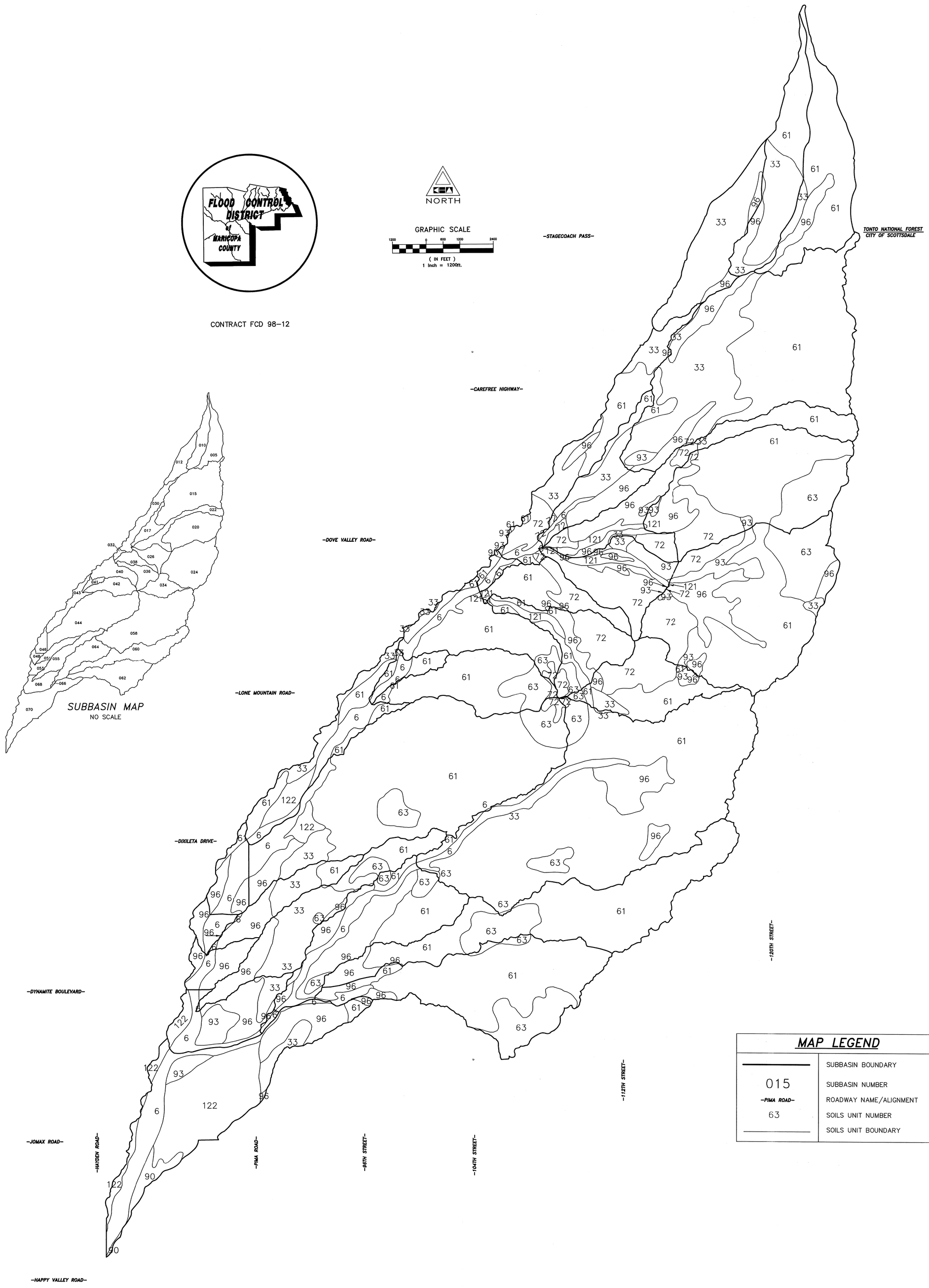
(IN FEET)
1 inch = 1200ft.



MAP LEGEND

———	SUBBASIN BOUNDARY
015	SUBBASIN NUMBER
-PIMA ROAD-	ROADWAY NAME/ALIGNMENT
63	SOILS UNIT NUMBER
———	SOILS UNIT BOUNDARY

UPPER RAWHIDE WASH FLOODPLAIN DELINEATION STUDY

WATERSHED WORK MAP
SOILS BOUNDARIES

FIGURE G-4

SCALE (H): 1"=1200'
SCALE (V): NONE
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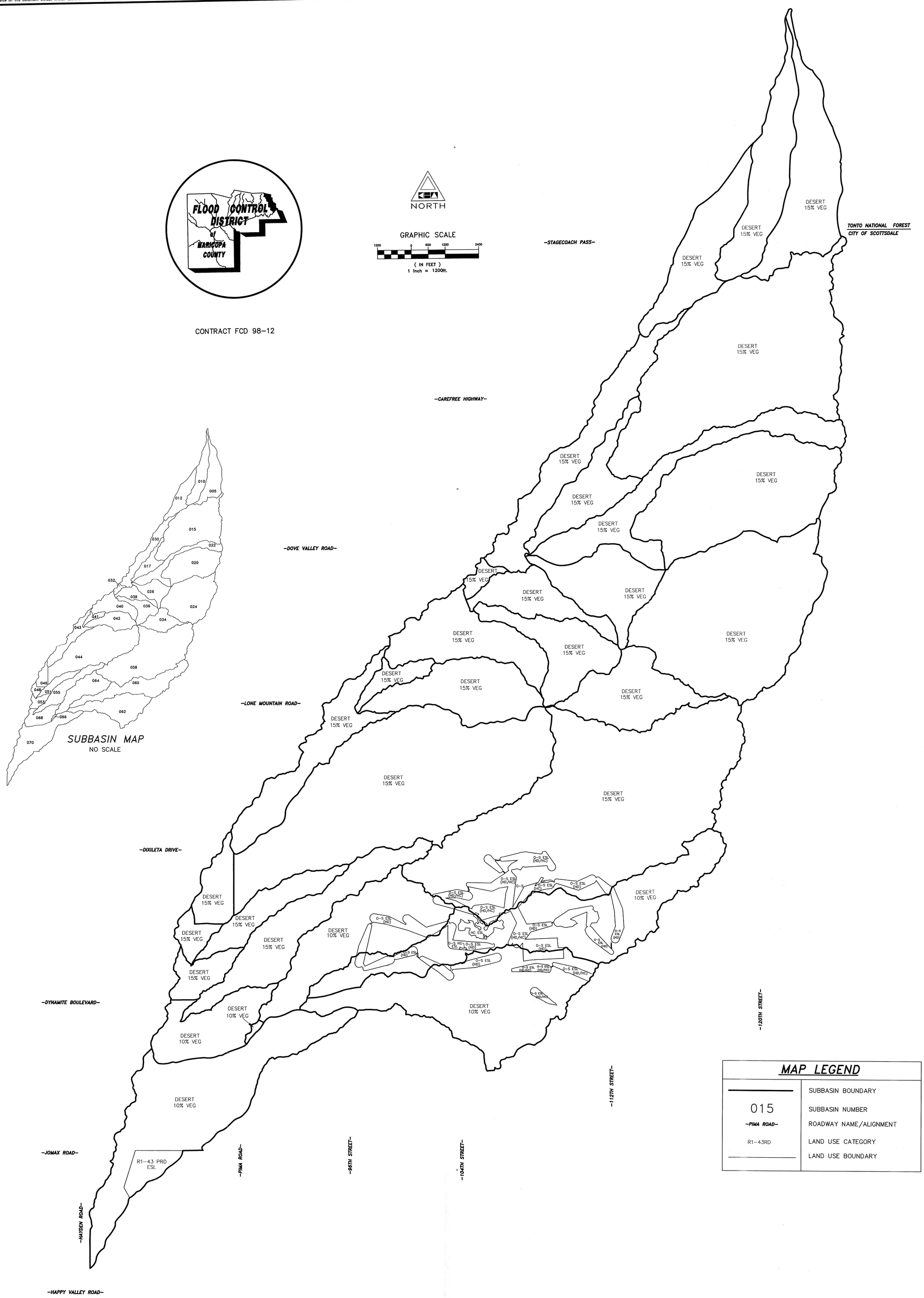
CONTRACT FCD 98-12

NORTH

GRAPHIC SCALE
1200 0 600 1200 2400
(IN FEET)
1 Inch = 1200ft.



UPPER RAWHIDE WASH FLOODPLAIN DELINEATION STUDY

WATERSHED WORK MAP
LAND USE BOUNDARIES

FIGURE G-5

SCALE (H): 1"=1200'
SCALE (V): NONE
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DESIGNED BY: LSM
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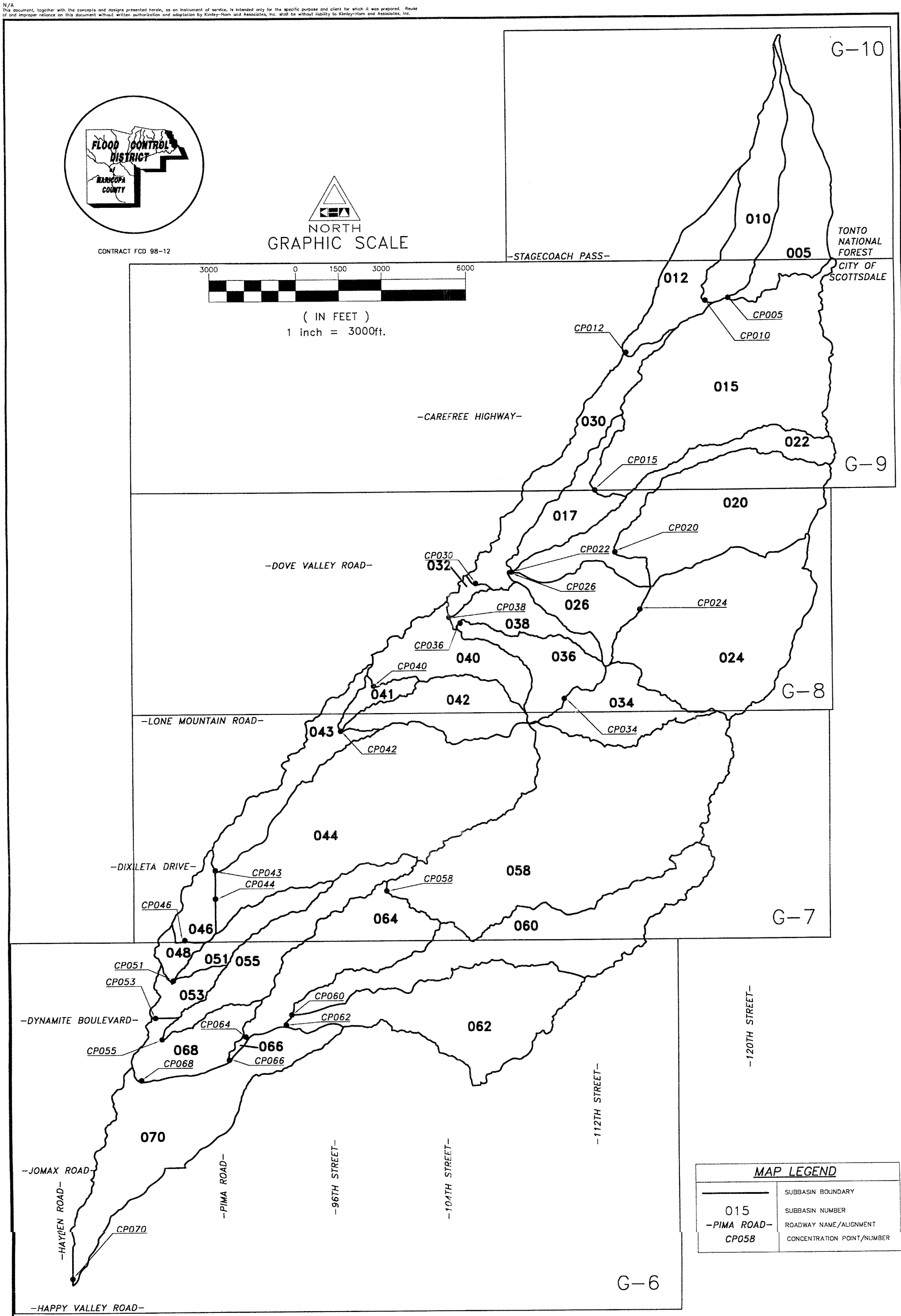

KEY MAP FOR FIGURES G6 - G10

SCALE (H): 1"=3000'
SCALE (V): NONE
DRAWN BY: OJP
DESIGNED BY: LSM
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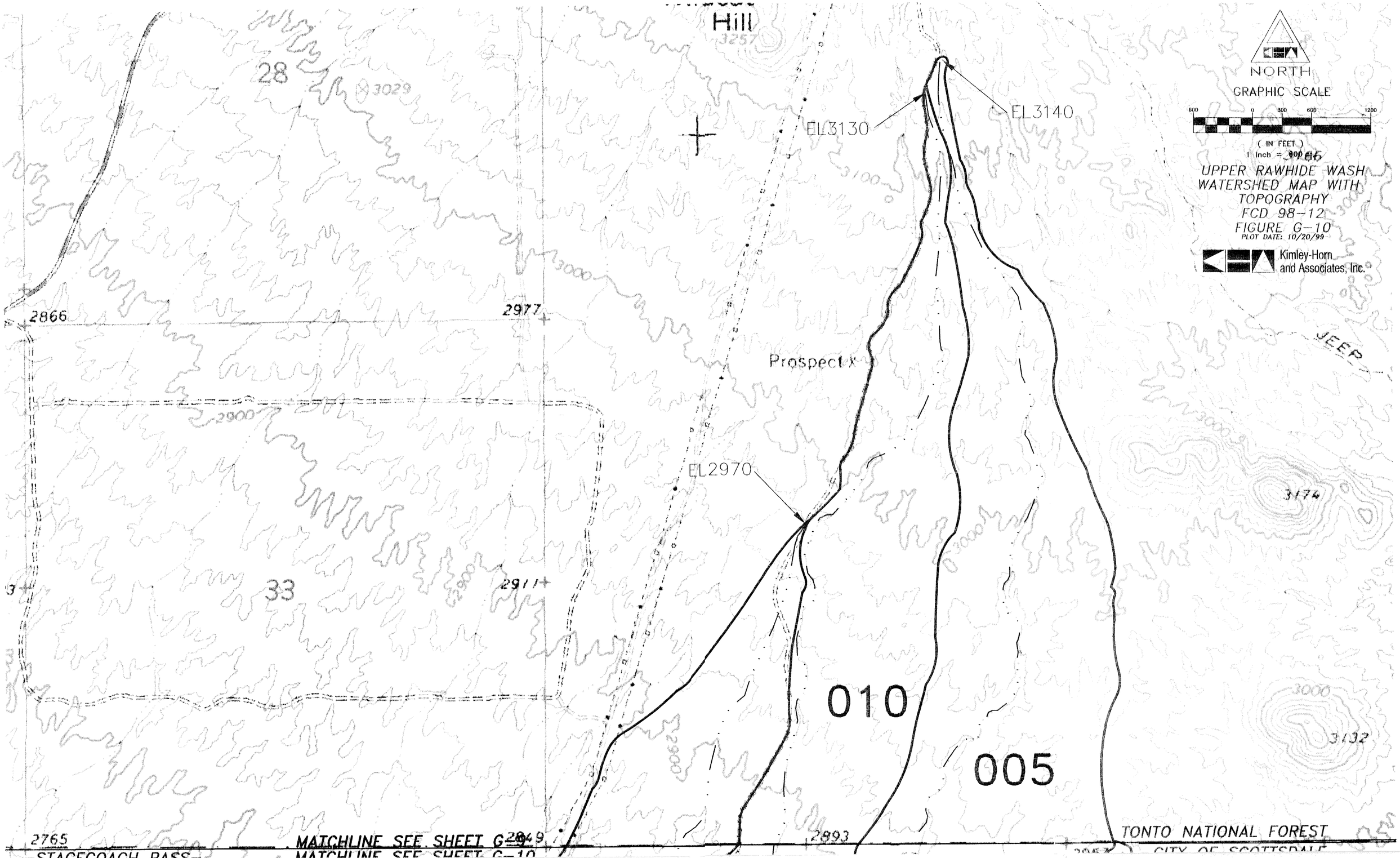
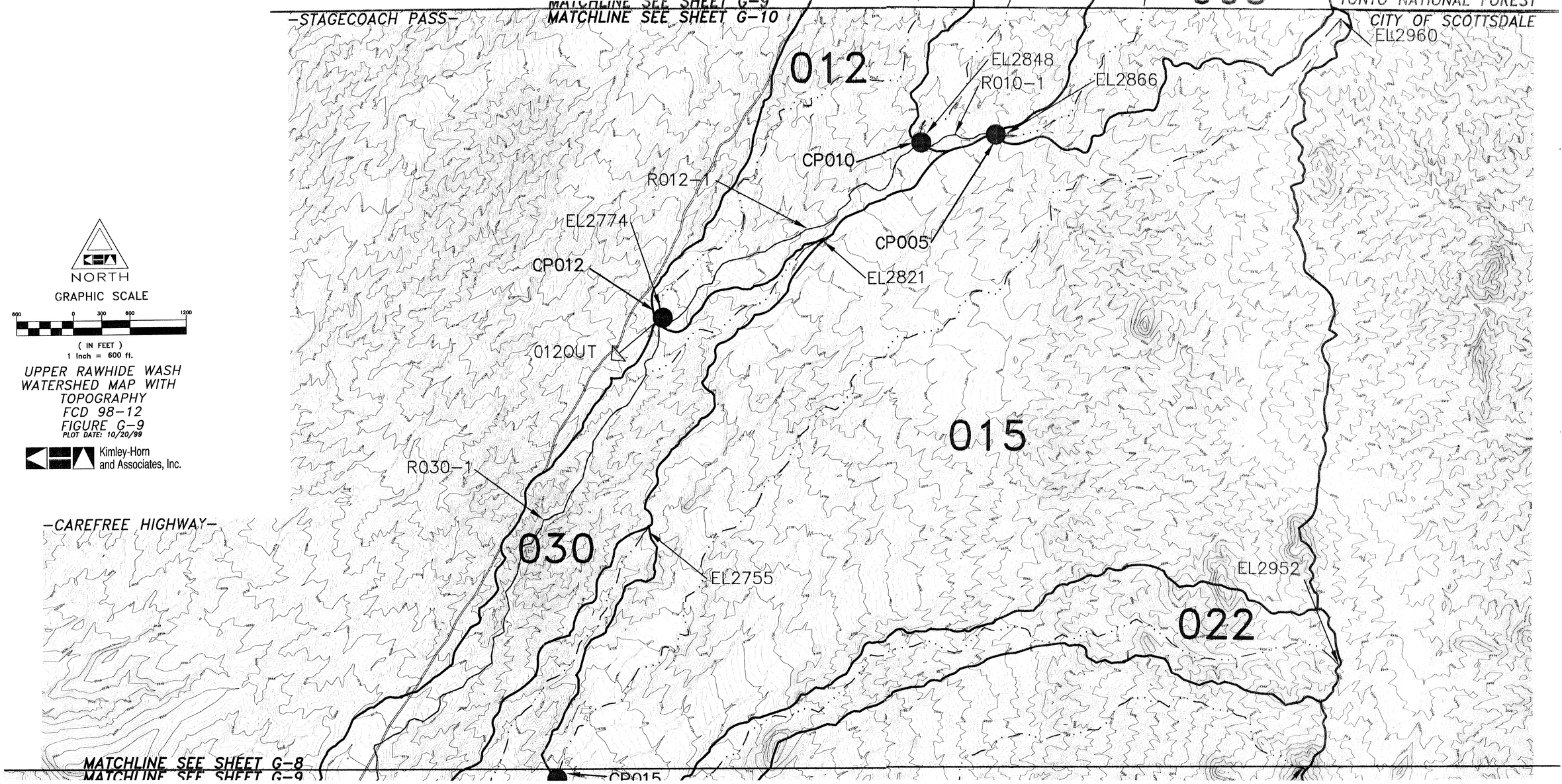
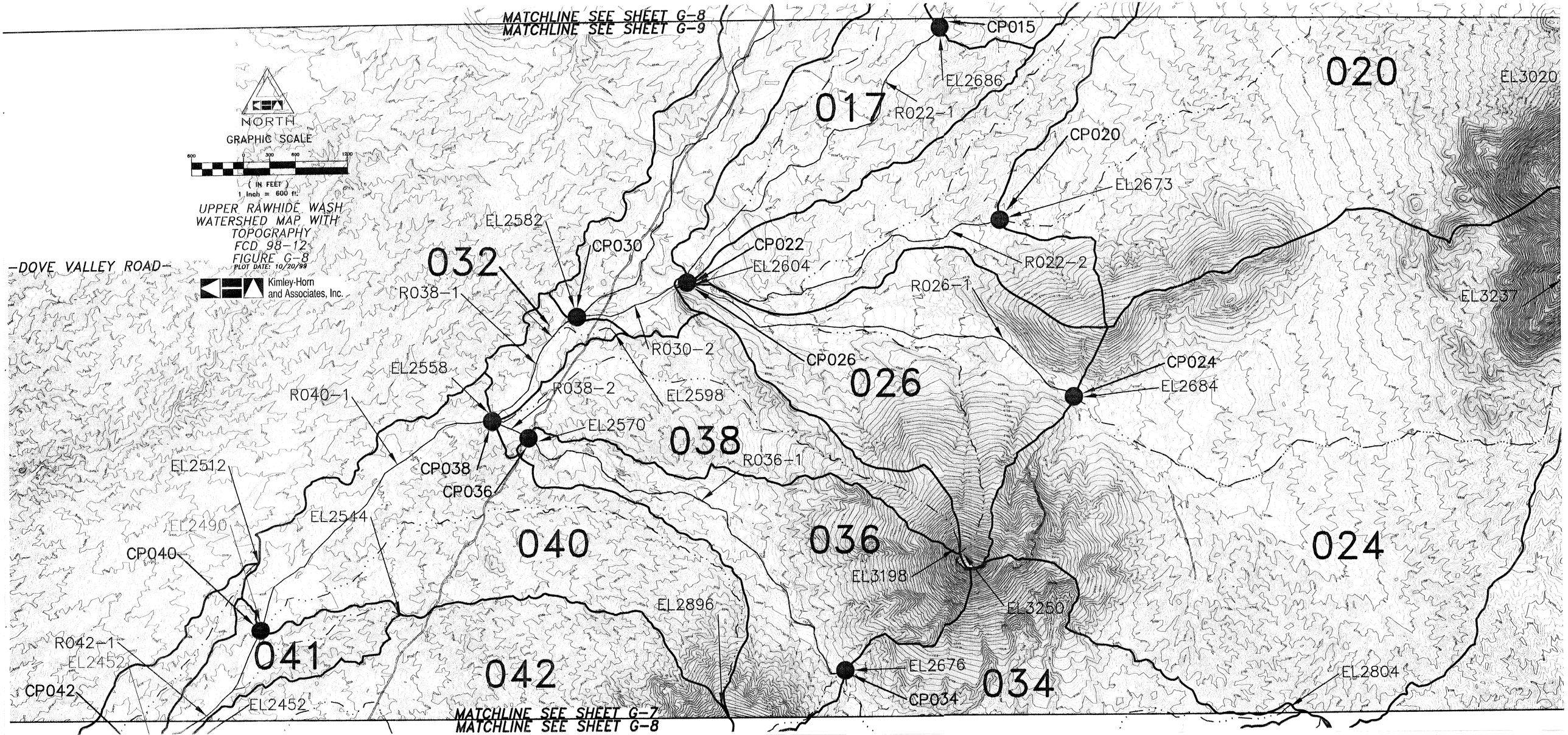
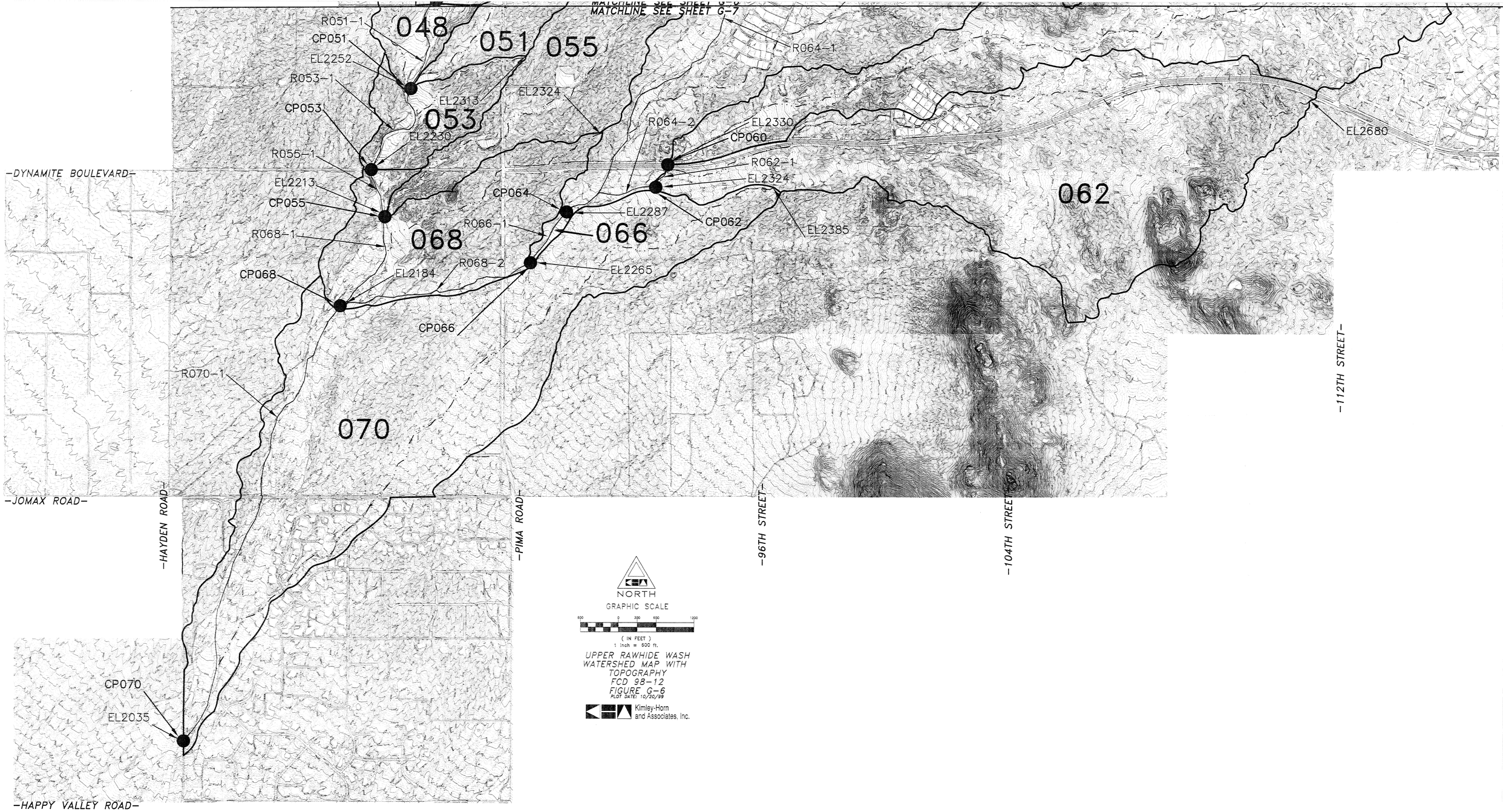

NORTH
GRAPHIC SCALE
600 0 300 600 1200
(IN FEET)
1 inch = 900 ft.
UPPER RAWHIDE WASH
WATERSHED MAP WITH
TOPOGRAPHY
FCD 98-12
FIGURE G-10
PLOT DATE: 10/20/99
Kimley-Horn
and Associates, Inc.
EL3130
EL3140
EL2970
Hill
3257
28
3029
2866
2977
Prospect
JEEP
3174
33
2911
010
005
3132
2765
2949
2893
MATCHLINE SEE SHEET G-9
MATCHLINE SEE SHEET G-10
TONTO NATIONAL FOREST
CITY OF SCOTTSDALE


-STAGECOACH PASS-
MATCHLINE SEE SHEET G-10
TONTO NATIONAL FOREST
CITY OF SCOTTSDALE
EL2960
012
EL2848
R010-1
EL2866
CP010
R012-1
EL2774
CP005
CP012
EL2821
012OUT
015
R030-1
-CAREFREE HIGHWAY-
030
EL2755
EL2952
022
MATCHLINE SEE SHEET G-8
MATCHLINE SEE SHEET G-9
CP015
NORTH
GRAPHIC SCALE
600
0
300
600
1200
(IN FEET)
1 inch = 600 ft.
UPPER RAWHIDE WASH
WATERSHED MAP WITH
TOPOGRAPHY
FCD 98-12
FIGURE G-9
PLOT DATE: 10/20/99
Kimley-Horn
and Associates, Inc.


MATCHLINE SEE SHEET G-8
MATCHLINE SEE SHEET G-9
NORTH
GRAPHIC SCALE
600 0 300 600 1200
(IN FEET)
1 inch = 600 ft.
UPPER RAWHIDE WASH
WATERSHED MAP WITH
TOPOGRAPHY
FCD 98-12
FIGURE G-8
PLOT DATE: 10/20/99
Kimley-Horn
and Associates, Inc.
-DOVE VALLEY ROAD-
CP015
EL2686
017
R022-1
020
EL3020
CP020
EL2673
EL2582
CP030
032
R038-1
CP022
EL2604
R022-2
R026-1
EL3237
R030-2
CP026
026
CP024
EL2684
EL2558
R040-1
R038-2
EL2598
EL2570
038
R036-1
CP038
CP036
EL2512
EL2490
EL2544
040
036
024
CP040
EL3198
EL3250
EL2896
R042-1
EL2452
041
042
EL2676
034
EL2804
CP042
CP034
EL2452
MATCHLINE SEE SHEET G-7
MATCHLINE SEE SHEET G-8



UPPER RAWHIDE WASH
WATERSHED MAP WITH
TOPOGRAPHY
FCD 98-12
FIGURE G-6
PLOT DATE: 10/20/99

Kimley-Horn
and Associates, Inc.

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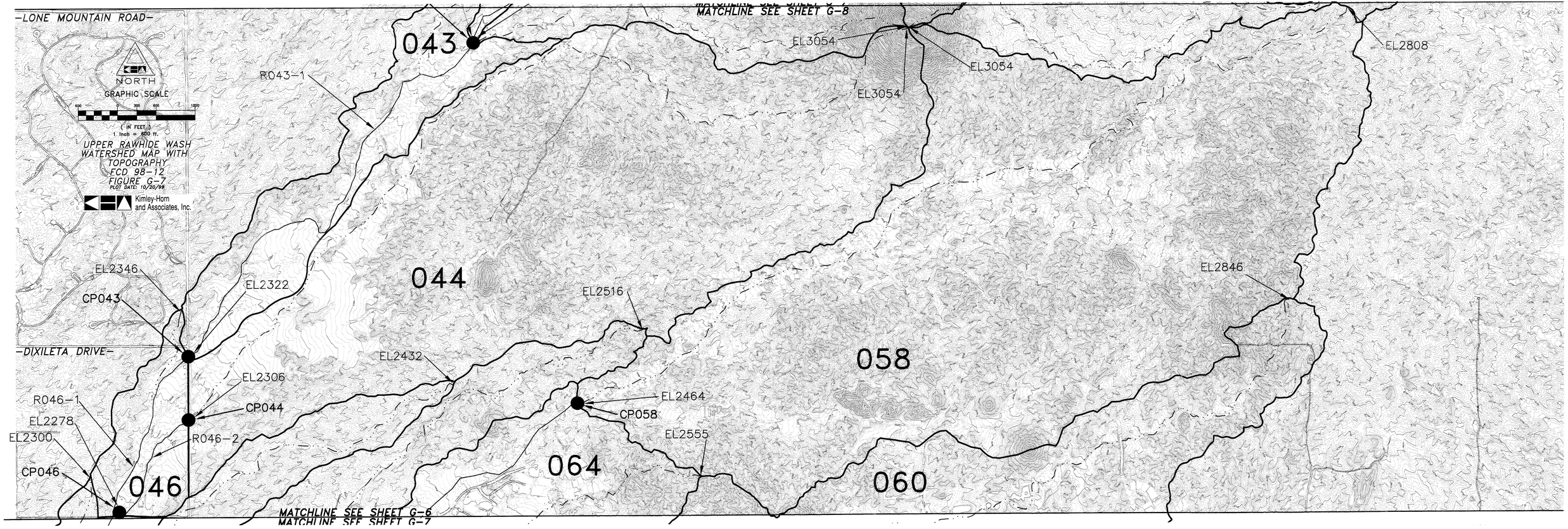
-LONE MOUNTAIN ROAD-
MATCHLINE SEE SHEET G-8
NORTH
GRAPHIC SCALE
(IN FEET)
1 inch = 600 ft.
UPPER RAWHIDE WASH
WATERSHED MAP WITH
TOPOGRAPHY
FCD 98-12
FIGURE G-7
PLOT DATE: 10/20/99
Kimley-Horn
and Associates, Inc.
043
R043-1
EL3054
EL3054
EL3054
EL2808
044
EL2346
CP043
EL2322
EL2516
EL2846
-DIXILETA DRIVE-
EL2432
058
EL2306
CP044
R046-1
EL2278
EL2300
R046-2
EL2464
CP058
EL2555
064
060
CP046
046
MATCHLINE SEE SHEET G-6
MATCHLINE SEE SHEET G-7