CAVE CREEK DRAINAGE MASTER PLAN
Final Hydrology Report
Cave Creek, Arizona

FINAL

Prepared for:

DATE

Flood Control District of Maricopa County
Contract No. FCD2004C072

Prepared by:

HDR | ONE COMPANY *Many Solutions*℠

3200 East Camelback Road
Suite 350
Phoenix, Arizona 85018-2311
602-522-7700

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1.0 INTRODUCTION

1.1 Purpose of Study

This report summarizes the hydrology performed under Phase I of Contract FCD2004C072 for the Cave Creek Drainage Master Plan. The purpose of the hydrology task is to:

- Research existing hydrologic models and studies within the study area;
- Estimate existing and future conditions runoff for a 6- and 24-hour duration for the 100-year, 50-year, 10-year, and 2-year for the areas not covered by existing models or areas needing additional detail.

1.2 Authority for Study

The Flood Control District of Maricopa County (FCDMC) has contracted HDR to prepare this study under Contract No. FCD 2004C072 as part of the Cave Creek Drainage Master Plan. The Project Manager at FCDMC is Ms. Felicia Terry at (602) 506-1501. The FCDMC is located at 2801 W. Durango Street in Phoenix, AZ 85009. The Project Manager at HDR is David Buras at (602) 522-7700.

1.3 Location of Study

The study limits are shown graphically on **Figure 1**, below, and generally consists of the Town of Cave Creek and a small portion of the adjacent Town of Carefree. However, due to the availability of existing hydrology, only portions of the study area were subject to new hydrologic modeling.

1.4 Hydrologic Methodology

The hydrologic methodology for this project is in accordance with the Drainage Design Manual for Maricopa County (DDMMC), Volume I, Hydrology.

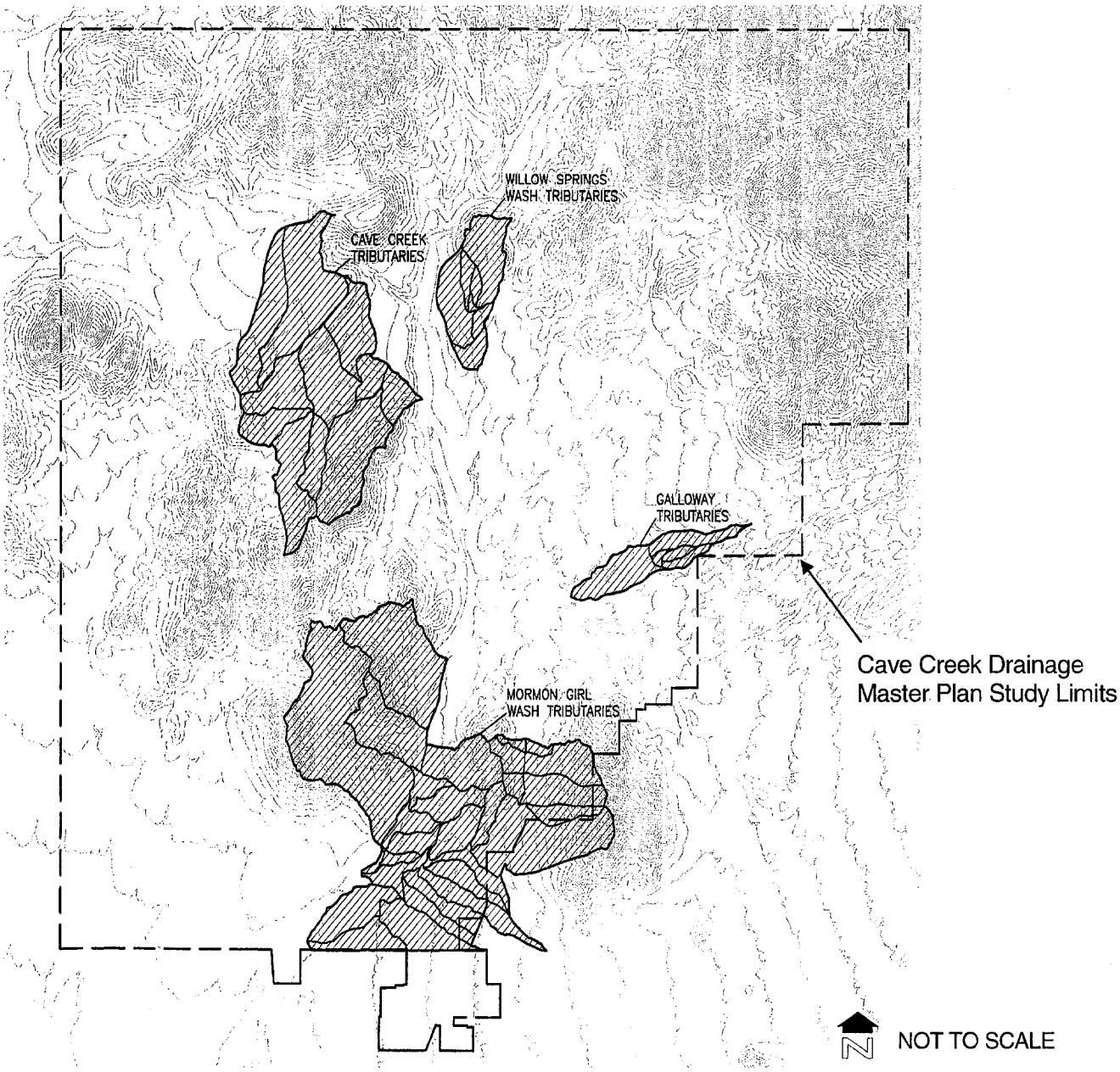


Figure 1 - Locations of New Hydrologic Models

2.0 PREVIOUS STUDIES

2.1 Previous Studies

The entire Study Area has been previously modeled to various levels of detail. However, additional detail and/or revisions were necessary for the current study. Existing models include:

- Cave Creek/Carefree Flood Insurance Study (FIS), 1990
- Cline Creek and Rodger Creek Floodplain Delineation Study (FDS), 1990
- Cave Creek from Tonto National Forest to Carefree Highway FDS, 1995
- Cave Creek FDS, 1996
- Desert Hills Area FDS, 1997
- Andora Hills and Galloway Washes FDS, 1999
- Carefree Drainage Master Plan, 2001
- Carefree Drainage Master Plan Update, 2005 (2-D routing study)

The extents of these studies are shown on **Sheet 2** in **Appendix F**. Although the entire watershed has been modeled in previous studies, it was determined that certain areas require additional detail for the purpose of the overall Drainage Master Plan and future floodplain mapping tasks.

2.2 Mapping

The base mapping for the project was provided under a separate contract by Cooper Aerial Surveys Company (Cooper). The mapping for entire study area was prepared by photogram metric methods to national map accuracy standards for 1"=100' horizontal scale and 2' contour intervals. The flight dates were November of 2003 through December of 2005. The horizontal and vertical control was supplied by Cooper. The coordinate system is based on NAVD88 (Covert to NGVD29 by-2.07 ft)

2.3 Method Description

HEC-1 modeling was developed for existing and future conditions using rainfall depths for a 6- and 24-hour duration for the 100-year, 50-year, 10-year, and 2-year events. The rainfall distribution type is the SCS Type II distribution for the 100-year 24-hour event, and Maricopa County Pattern storms for the 6-hour duration events. HEC-1 rainfall losses were estimated using the Green and Ampt infiltration equation option. The Phoenix Mountain and Desert/Rangeland S-graphs, as defined in the DDMMC were used to generate hydrographs. The normal depth storage routing

routine was used for all channel reaches. Representative 8-point cross sections were generated.

Concentration points were included at the limits of the study, at significant tributaries, and at road crossings or culverts. Additional consideration was given to the washes subject to future floodplain mapping under Phase II of this project. **Sheet 15** in **Appendix F,** prepared by JE Fuller as part of Phase I analysis, has been updated by HDR and depicts the Recommended Phase II Delineations of this report.

The modeling is divided into four groupings based on downstream terminus:

- Willow Springs Wash Tributaries
- Galloway Tributaries
- Mormon Girl Wash Tributaries
- Cave Creek Tributaries

Refer to **Sheet 1** in **Appendix F**, which depicts the limits of each grouping respective of the new hydrologic modeling.

2.4 Drainage Area Boundaries

Watershed limits were previously determined by prior studies. Necessary refinement to the drainage area boundaries for additional concentration points was made utilizing the 2-foot interval contour topography.

2.5 Watershed Work Maps

Sheet 1 in **Appendix F** is a Location Map, and **Sheet 6** contains a Sheet index for **Sheets 7** through **14** which contain work maps for the four hydrologic mapping areas. **Sheet 2** contains previous mapping and hydrologic subbasins for the study area. **Sheets 3** through **5** contain soils and land use properties for the new hydrologic sub basins respectively. **Sheets 7** through **10** contain subbasin boundaries, flow paths, and centroid locations. Sheets 11 through 14 contain HEC-1 schematics.

2.6 Gage Data

The FCDMC operates a 24-hour rain, stream and weather gage network, which provides "real time" information to the County and many other agencies about rainfall, stormwater runoff and weather conditions in Maricopa County.

This network operates in the National Weather Service ALERT (Automated Local Evaluation in Real Time) format and is commonly referred to as an ALERT system. In addition to rainfall and streamflow, gages measure temperature, humidity, wind speed, barometric pressure, wind direction and solar radiation.

The ALERT system uses "automatic" telemetry gages for data collection. This means that the gages transmit their information to the District base computers via VHF radio. The computers then quickly compile the information and display it on video screens. The automatic gages are powered by 12-volt batteries, which are recharged using small solar panels attached to the top or sides of the gages

Several ALERT stream and precipitation gages exist in the Cave Creek area; however, none of them are located within the drainage boundaries for the watersheds subject to this hydrology. The gages in the area are:

- Cave Creek, ALERT #4890 for both precipitation and stream flow
- Cave Creek at Spur Cross, ALERT #4920 for both precipitation and stream flow
- Cave Creek Fire, ALERT #4945

2.7 Statistical Parameters

Precipitation depth-duration-frequency statistics published by the National Oceanic and Atmospheric Administration, Atlas 2, were used for this study per County guidelines.

2.8 Precipitation and Runoff

2.8.1 Historical Precipitation Records

Historical precipitation information is included in the March 2002 study for the FDS of Andora Hills and Galloway Washes report (JE Fuller, FCD 99-14). Excerpts of this report are included in **Appendix C.**

2.8.2 Rainfall Depth and Distribution

Storm distributions include the SCS Type II distribution for the 24-hour storms and the Maricopa County Pattern storms for 6-hour storms per Table 2.4 of the DDMMC.

Table 1: Point Precipitation Summary for Carefree, Arizona (021282)	
Storm Frequency and Duration	**Point Precipitation (Inches)**
100-year, 24-hour	4.464
100-year, 6-hour	3.265
50-year, 24-hour	3.998
50-year, 6-hour	2.939
10-year, 24-hour	2.921
10-year, 6-hour	2.180
2-year, 24-hour	1.844
2-year, 6-hour	1.441

2.8.3 Areal Precipitation Reduction

Due to the small size of the drainage basins with no basin over 1 square mile, areal reduction per Section 2.3 of the DDMMC was not utilized.

2.8.4 Manual Input Hydrographs

A contributing area to the Mormon Girl Tributaries was previously studied in the 2005 *Carefree Drainage Master Plan Update: 100-year, 24-hour 2-D Floodplain Model.* This study was initiated by the FCD upon completion of the Carefree Drainage Master Plan due to a complex flow split situation upstream of the current study limit.

This flow split results in the need for three separate input locations of hydrographs derived from the 2-D study into the current model. **Appendix B** contains hydrograph generation calculations and locations.

The hydrograph was generated for the 100-year, 24-hour event. A 6-hour duration event was not prepared as part of the Carefree Update. Therefore, a 6-hour model was not prepared as part of this study for the area downstream of the Carefree model.

2.9 Physical Parameters

2.9.1 Rainfall Losses

Rainfall losses were estimated using the Green and Ampt Infiltration Equation as specified in the DDMMC. **Appendix B** contains detailed calculations and summaries of the Green and Ampt parameters.

2.9.2 Land Use

Land use information was derived from several sources:

- Town of Cave Creek Zoning Maps
- Aerial photography
- Maricopa County Assessor's Office

Existing and future land use maps were created from these sources, as shown in **Sheets 4 and 5** in **Appendix F**. Subbasin delineations were overlaid on the zoning maps and/or aerial photography to determine the percentage of each land use in each subbasin. The land use breakdowns were input into FCDMC's DDMS-W computer program which calculates the area-weighted averages of each land use type to determine the Green and Ampt parameter values for DTHETA, %Vegetation Cover, RTIMP, IA, and Kn. Calculations are included in **Appendix B**.

2.9.3 Soils

Electronic soils maps derived from the Soil Conservation Service and the U.S. Forest Service were provided by the FCDMC. **Sheet 3** in **Appendix F** presents the soil units for the project area. Subbasin delineations were overlaid on the soils maps to determine the percentage of each soil unit in each subbasin. Using FCDMC's DDMS-W computer program, soil texture data was logarithmically weighted by area to determine Green and Ampt parameter values for XKSAT, PSIF, and rock outcropping percentages. **Appendix B** contains summaries and calculations for each subbasin.

2.9.4 Unit Hydrograph

The Clark Unit Hydrograph, as defined in section 5.2 of the DDMMC, was used for this study. The Clark Unit Hydrograph is typically used for watersheds or subbasins less than 5 square miles in size, and is the preferred method of analysis per DDMMC. **Appendix B** contains additional information on each subbasin.

2.9.5 Channel Routing

The normal depth storage routing routine was used for all channel reaches in this study. Representative 8-point cross sections were obtained from the 2-foot contour

interval mapping for each routing reach. Manning's roughness coefficients, or "n"-values were chosen based on detailed study of the area and are consistent with those used in previous modeling efforts for the area. The NSTPS (number of steps used in the storage routing routine) were determined by developing a stage/discharge table for each cross section, and iterating between that and the discharge at the upstream end of the routing reach. Calculations for channel routing are contained in **Appendix B**.

2.10 Special Problems

A 6-hour duration model was not created in this study for the Mormon Girl Wash tributaries. This is due to the lack of a 6-hour duration FLO-2D model for the upstream contributing subbasins that require direct input from the two dimensional model, created as part of the Carefree DMP Update.

The Carefree DMP Update produced a single 100-year, 24-hour model. In order to develop hydrographs for the lesser (50-year, 25-year, 10-year, 5-year and 2-year) storm events, the 100-year hydrograph was reduced. Reduction of the respective 100-year, 24-hour model unit hydrograph was prepared utilizing a roughness reduction methodology. As a result, dividing the unit hydrograph discharge values by a factor proportional to the unit roughness for each corresponding storm event provided an approximated equivalent discharge for the durations respectively. Refer to **Table 2.10.1**, for reduction values utilized within the associated storm event hydrographs prepared as a product of the 100-year, 24-hour hydrograph.

Table 2.10.1 - Hydrograph Reduction Values

Storm Event (24-Hour)	Reduction Factor
100-YR	0
50-YR	1.04
25-YR	1.14
10-YR	1.25
5-YR	1.25
2-YR	1.25

2.11 Calibration

Due to the lack of recorded data for the washes, calibration was not performed.

2.12 Modeling Warning and Error Messages

HEC-1 reported the following warning message: "routed outflow (xxxx) is greater than maximum outflow (xxxxx) in storage-outflow table". This warning is a result of a hydrograph creation where the index area is greater than the actual basin area at the point where the warning is generated. This warning is common, and does not affect any of the interpolated discharges.

3.0 RESULTS

A summary of the results are shown below. Results and electronic copies of the HEC-1 input and output files are attached in **Appendix E**.

Storm Event	Concentration Point	Existing 6-Hour Flow	Existing 24-Hour Flow	Future 6-Hour Flow	Future 24-Hour Flow
2-Year	C12A	404	522	746	837
	C33A	250	187	324	252
	C47	93	65	127	94
	C64	456	2065	622	2156
10-Year	C12A	1464	1732	1855	2012
	C33A	618	498	706	541
	C47	266	212	308	239
	C64	1302	2610	1474	2676
50-Year	C12A	2216	2692	3024	3317
	C33A	1019	831	1089	862
	C47	482	388	528	407
	C64	2212	3415	2375	3498
100-Year	C12A	3198	3699	3528	3878
	C33A	1182	969	1252	993
	C47	579	467	625	487
	C64	2611	3829	2765	3900

Note: C12A is located at confluence of Cave Creek Trib 1 at Cave Creek
C33A is located at confluence of Willow Springs Trib 6 at Willow Springs
C47 is located at confluence of Galloway Trib 2 at Galloway Wash
C64 is located at confluence of Mormon Girl Trib 1 at Cave Creek

4.0 VERIFICATION

The results of the HEC-1 model were compared to two sources:

- Regression Equations
- Unit discharges (cfs/square mile) comparison with previous studies in the area

Appendix E contains results of the verifications.

APPENDIX A REFERENCES

Adobe Dam/Desert Hills ADMP, FCD #2002C001, FCDMC, Various dates from 2003 through 2005.

Carefree Drainage Master Plan, FCD #2004C025, FCDMC, 2003

Carefree Drainage Master Plan Update, FCD #2004C025 Work Assignment #2, FCDMC, August 2005.

Cave Creek Above Carefree Highway Floodplain Delineation Study, FCDMC 95-28, July 1997.

Cave Creek/Carefree Flood Delineation Study, FCD #88-53, March 1990.

Flood Control District of Maricopa County, "Drainage Design Manual for Maricopa County, Arizona," Volume I, Hydrology, January 1, 1995.

Flood Control District of Maricopa County, "Drainage Design Manual for Maricopa County, Arizona," Volume II, Hydraulics, January 28, 1996.

Floodplain Delineation Study of Andora Hills and Galloway Washes, FCD #99-14, January 2000.

Flood Delineation Study of Cline Creek, FCD #89-15, April 1990.

Maricopa Association of Governments, "Uniform Standard Details for Public Works Construction", 1998 (Includes Revisions through 2001).

North Scottsdale Floodplain Delineation Study, FCD #2003C008, FCDMC, April 2005.

North Scottsdale Floodplain Delineation Study, FCD #2003C008, FCDMC, April 2005.

Rodger Creek Floodplain Delineation Study, FCD #89-15, April 1990.

APPENDIX B CALCULATIONS

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB12A	V.L.D.R.	0.010	11.1	Normal	20.0	5	0.30	0.050	Low	0.069
	DESERT	0.079	88.9	Dry	25.0		0.35	0.030	Low	0.057
SUB-13	V.L.D.R.	0.007	1.3	Normal	20.0	5	0.30	0.050	Low	0.071
	DESERT	0.534	98.7	Dry	25.0		0.35	0.030	Low	0.045
SUB14A	DESERT	0.180	100.0	Dry	25.0		0.35	0.030	Low	0.052
SUB14B	DESERT	0.267	100.0	Dry	25.0		0.35	0.030	Low	0.049
SUB14C	DESERT	0.458	100.0	Dry	25.0		0.35	0.030	Low	0.046
SUB-18	DESERT	0.083	21.5	Dry	25.0		0.35	0.030	Low	0.056
	DESERT	0.303	78.5	Dry	25.0		0.35	0.030	Low	0.049
SUB19A	DESERT	0.111	100.0	Dry	25.0		0.35	0.030	Low	0.055
SUB19B	DESERT	0.143	55.6	Dry	25.0		0.35	0.030	Low	0.053
	DESERT	0.114	44.4	Dry	25.0		0.35	0.030	Low	0.054
SUB19C	DESERT	0.097	92.8	Dry	25.0		0.35	0.030	Low	0.055
	DESERT	0.008	7.2	Dry	25.0		0.35	0.030	Low	0.071
SUB33A	V.L.D.R.	0.029	53.0	Normal	20.0	5	0.30	0.050	Low	0.062
	V.L.D.R.	0.013	22.6	Normal	20.0	5	0.30	0.050	Low	0.068
	DESERT	0.014	24.4	Dry	25.0		0.35	0.030	Low	0.067
SUB33B	V.L.D.R.	0.042	27.1	Normal	20.0	5	0.30	0.050	Low	0.060
	V.L.D.R.	0.050	32.3	Normal	20.0	5	0.30	0.050	Low	0.059
	DESERT	0.063	40.6	Dry	25.0		0.35	0.030	Low	0.058
SUB33C	V.L.D.R.	0.023	82.1	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.005	17.9	Dry	25.0		0.35	0.030	Low	0.073
SUB33D	V.L.D.R.	0.004	12.4	Normal	20.0	5	0.30	0.050	Low	0.074
	V.L.D.R.	0.013	37.3	Normal	20.0	5	0.30	0.050	Low	0.067
	DESERT	0.018	50.3	Dry	25.0		0.35	0.030	Low	0.065

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB33E	V.L.D.R.	0.012	6.2	Normal	20.0	5	0.30	0.050	Low	0.068
	V.L.D.R.	0.016	8.4	Normal	20.0	5	0.30	0.050	Low	0.066
	DESERT	0.166	85.4	Dry	25.0		0.35	0.030	Low	0.052
SUB33F	V.L.D.R.	0.013	63.0	Normal	20.0	5	0.30	0.050	Low	0.067
	V.L.D.R.	0.004	19.0	Normal	20.0	5	0.30	0.050	Low	0.074
	DESERT	0.004	18.0	Dry	25.0		0.35	0.030	Low	0.075
SUB-45	V.L.D.R.	0.009	10.3	Normal	20.0	5	0.30	0.050	Low	0.069
	DESERT	0.079	89.7	Dry	25.0		0.35	0.030	Low	0.057
SUB46A	V.L.D.R.	0.007	20.5	Normal	20.0	5	0.30	0.050	Low	0.071
	DESERT	0.026	79.5	Dry	25.0		0.35	0.030	Low	0.063
SUB46B	V.L.D.R.	0.004	11.6	Normal	20.0	5	0.30	0.050	Low	0.075
	DESERT	0.027	88.4	Dry	25.0		0.35	0.030	Low	0.063
SUB-47	V.L.D.R.	0.122	68.7	Normal	20.0	5	0.30	0.050	Low	0.054
	DESERT	0.056	31.3	Dry	25.0		0.35	0.030	Low	0.059
SUB-57	V.L.D.R.	0.027	40.0	Normal	20.0	5	0.30	0.050	Low	0.063
	DESERT	0.040	60.0	Dry	25.0		0.35	0.030	Low	0.061
SUB-58	V.L.D.R.	0.037	33.8	Normal	20.0	5	0.30	0.050	Low	0.061
	DESERT	0.073	66.2	Dry	25.0		0.35	0.030	Low	0.057
SUB-59	V.L.D.R.	0.019	23.2	Normal	20.0	5	0.30	0.050	Low	0.065
	L.D.R.	0.049	59.4	Normal	50.0	15	0.30	0.050	Low	0.059
	DESERT	0.014	17.5	Dry	25.0		0.35	0.030	Low	0.067
SUB-60	L.D.R.	0.053	57.3	Normal	50.0	15	0.30	0.050	Low	0.059
	DESERT	0.036	39.3	Dry	25.0		0.35	0.030	Low	0.061
	V.L.D.R.	0.003	3.4	Normal	20.0	5	0.30	0.050	Low	0.076
SUB-61	DESERT	0.018	12.5	Dry	25.0		0.35	0.030	Low	0.065
	V.L.D.R.	0.032	22.6	Normal	20.0	5	0.30	0.050	Low	0.062

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-61	L.D.R.	0.092	64.8	Normal	50.0	15	0.30	0.050	Low	0.056
	COMM	0.000	0.1	Normal	75.0	80	0.10	0.020	Min	0.047
SUB-62	L.D.R.	0.015	15.0	Normal	50.0	15	0.30	0.050	Low	0.067
	V.L.D.R.	0.041	41.5	Normal	20.0	5	0.30	0.050	Low	0.061
	DESERT	0.043	43.5	Dry	25.0		0.35	0.030	Low	0.060
SUB-63	DESERT	0.016	19.5	Dry	25.0		0.35	0.030	Low	0.066
	V.L.D.R.	0.065	79.7	Normal	20.0	5	0.30	0.050	Low	0.058
	COMM	0.001	0.9	Normal	75.0	80	0.10	0.020	Min	0.042
SUB-64	V.L.D.R.	0.059	83.9	Normal	20.0	5	0.30	0.050	Low	0.058
	V.L.D.R.	0.000	0.3	Normal	20.0	5	0.30	0.050	Low	0.092
	DESERT	0.011	15.8	Dry	25.0		0.35	0.030	Low	0.068
SUB-69	V.L.D.R.	0.049	10.5	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.014	2.9	Normal	20.0	5	0.30	0.050	Low	0.067
	V.L.D.R.	0.001	0.2	Normal	20.0	5	0.30	0.050	Low	0.082
	L.D.R.	0.209	44.3	Normal	50.0	15	0.30	0.050	Low	0.051
	DESERT	0.198	42.1	Dry	25.0		0.35	0.030	Low	0.051
SUB-70	V.L.D.R.	0.006	8.1	Normal	20.0	5	0.30	0.050	Low	0.072
	L.D.R.	0.010	14.3	Normal	50.0	15	0.30	0.050	Low	0.069
	DESERT	0.056	77.6	Dry	25.0		0.35	0.030	Low	0.059
SUB-71	M.F.R.	0.001	3.5	Normal	50.0	45	0.25	0.050	Low	0.082
	L.D.R.	0.000	1.2	Normal	50.0	15	0.30	0.050	Low	0.088
	DESERT	0.033	95.4	Dry	25.0		0.35	0.030	Low	0.062
SUB-72	DESERT	0.117	75.2	Dry	25.0		0.35	0.030	Low	0.054
	V.L.D.R.	0.004	2.6	Normal	20.0	5	0.30	0.050	Low	0.074
	L.D.R.	0.034	22.2	Normal	50.0	15	0.30	0.050	Low	0.062
SUB-73	M.F.R.	0.001	2.3	Normal	50.0	45	0.25	0.050	Low	0.081
	COMM	0.001	1.4	Normal	75.0	80	0.10	0.020	Min	0.042

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-73	DESERT	0.054	96.2	Dry	25.0		0.35	0.030	Low	0.059
SUB-74	COMM	0.004	2.6	Normal	75.0	80	0.10	0.020	Min	0.037
	L.D.R.	0.055	35.3	Normal	50.0	15	0.30	0.050	Low	0.059
	L.D.R.	0.004	2.4	Normal	50.0	15	0.30	0.050	Low	0.075
	V.L.D.R.	0.006	3.5	Normal	20.0	5	0.30	0.050	Low	0.072
	DESERT	0.088	56.2	Dry	25.0		0.35	0.030	Low	0.056
SUB-75	DESERT	0.016	100.0	Dry	25.0		0.35	0.030	Low	0.066
SUB-76	DESERT	0.004	21.3	Dry	25.0		0.35	0.030	Low	0.074
	V.L.D.R.	0.016	78.7	Normal	20.0	5	0.30	0.050	Low	0.066

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R14C	4	0.053	0.045	0.053	3270	0.0130	246.00	**Sta**	0.0	4.8	9.6	14.5	39.4	78.3	94.4	110.1
									Elev	246.0	244.0	242.0	240.0	240.0	242.0	244.0	246.0
01		1	0.053	0.045	0.053	477	0.0168	192.00	**Sta**	0.0	15.0	30.0	40.5	41.5	52.5	73.7	108.0
									Elev	192.0	191.0	190.0	188.0	188.0	190.0	190.2	192.0
01	R19C	5	0.053	0.045	0.053	4116	0.0114	204.00	**Sta**	0.0	47.6	66.1	87.7	106.8	112.7	131.1	138.9
									Elev	204.0	202.0	200.0	198.0	198.0	200.0	202.0	204.0
01		1	0.053	0.045	0.053	564	0.0390	262.00	**Sta**	0.0	8.2	16.6	27.9	50.0	57.9	65.9	73.0
									Elev	262.0	260.0	258.0	256.0	256.0	258.0	260.0	262.0
01	R18	2	0.053	0.045	0.053	2572	0.0233	146.00	**Sta**	0.0	2.6	5.9	9.9	20.8	24.7	27.3	30.4
									Elev	146.0	144.0	142.0	140.0	140.0	142.0	144.0	146.0
01		1	0.053	0.045	0.053	403	0.0546	92.00	**Sta**	0.0	10.7	21.5	44.3	64.8	88.0	122.0	149.0
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R33D	3	0.053	0.045	0.053	1637	0.0104	188.00	**Sta**	0.0	49.3	60.6	71.9	83.0	133.7	175.9	214.2
									Elev	188.0	186.0	184.0	182.0	182.0	184.0	186.0	188.0
01		1	0.053	0.045	0.053	455	0.0132	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R33C	1	0.053	0.045	0.053	1320	0.0159	158.00	**Sta**	0.0	6.5	14.3	25.5	44.2	52.6	58.3	64.3
									Elev	158.0	156.0	154.0	152.0	152.0	154.0	156.0	158.0
01	R45	9	0.053	0.045	0.053	4898	0.0218	192.00	**Sta**	0.0	26.3	64.2	107.1	146.4	157.7	166.9	176.3
									Elev	192.0	190.0	188.0	186.0	186.0	188.0	190.0	192.0
01	R76	2	0.053	0.045	0.053	919	0.0152	114.00	**Sta**	0.0	44.9	63.2	67.9	71.3	107.2	136.4	159.2
									Elev	114.0	112.0	110.0	108.0	108.0	110.0	112.0	114.0
01	R74	2	0.053	0.045	0.053	1412	0.0212	92.00	**Sta**	0.0	25.4	69.1	79.9	84.8	92.1	99.9	130.3
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R72	4	0.053	0.045	0.053	3492	0.0218	6.00	**Sta**	0.0	21.3	57.8	75.7	77.8	85.0	92.5	99.9
									Elev	5.0	4.0	2.0	0.0	0.0	2.0	4.0	6.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R69	3	0.053	0.045	0.053	2610	0.0146	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R60	1	0.053	0.045	0.053	420	0.0143	960.00	**Sta**	0.0	42.8	63.6	82.6	106.8	117.5	120.1	182.8
									Elev	964.0	962.0	960.0	958.0	958.0	960.0	960.0	960.0
01	R61	1	0.053	0.045	0.053	780	0.0103	950.00	**Sta**	0.0	7.4	14.6	36.2	47.1	62.9	69.6	76.4
									Elev	950.0	948.0	946.0	946.0	946.0	946.0	948.0	950.0
01	R63	2	0.053	0.045	0.053	2145	0.0196	922.00	**Sta**	0.0	4.2	8.2	12.2	36.3	41.2	45.8	50.4
									Elev	922.0	920.0	918.0	916.0	916.0	918.0	920.0	922.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB12A	Aguila/Carefree	8	0.000	0.1	0.96		
		Aguila/Carefree	26	0.001	1.1	0.01		
		Aguila/Carefree	66	0.029	31.9	0.23		
		Aguila/Carefree	72	0.060	66.9	0.09	30.0	100
	SUB-13	Aguila/Carefree	33	0.076	14.0	0.23		
		Aguila/Carefree	34	0.119	22.0	0.23		
		Aguila/Carefree	66	0.245	45.2	0.23		
		Aguila/Carefree	72	0.076	14.0	0.09	30.0	100
		Aguila/Carefree	93	0.026	4.8	0.33		
	SUB14A	Aguila/Carefree	26	0.061	33.6	0.01		
		Aguila/Carefree	33	0.011	5.9	0.23		
		Aguila/Carefree	34	0.004	2.3	0.23		
		Aguila/Carefree	66	0.071	39.3	0.23		
		Aguila/Carefree	72	0.021	11.5	0.09	30.0	100
		Aguila/Carefree	93	0.012	6.6	0.33		
		Aguila/Carefree	95	0.001	0.7	0.04		
	SUB14	Aguila/Carefree	26	0.038	14.3	0.01		
		Aguila/Carefree	66	0.163	61.2	0.23		
		Aguila/Carefree	72	0.001	0.2	0.09	30.0	100
		Aguila/Carefree	95	0.065	24.4	0.04		
	SUB14	Aguila/Carefree	26	0.076	16.7	0.01		
		Aguila/Carefree	34	0.000		0.23		
		Aguila/Carefree	66	0.228	49.6	0.23		
		Aguila/Carefree	72	0.016	3.4	0.09	30.0	100
		Aguila/Carefree	95	0.139	30.3	0.04		
	SUB-18	Aguila/Carefree	66	0.002	0.5	0.23		
		Aguila/Carefree	72	0.383	99.5	0.09	30.0	100
	SUB19A	Aguila/Carefree	26	0.016	14.5	0.01		
		Aguila/Carefree	66	0.024	21.9	0.23		
		Aguila/Carefree	72	0.070	63.7	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.013	5.0	0.23		
		Aguila/Carefree	72	0.244	95.0	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.000	0.1	0.23		
		Aguila/Carefree	72	0.105	99.9	0.09	30.0	100
	SUB33A	Aguila/Carefree	26	0.012	22.5	0.01		
		Aguila/Carefree	34	0.013	24.3	0.23		
		Aguila/Carefree	66	0.024	42.8	0.23		
		Aguila/Carefree	72	0.006	10.5	0.09	30.0	100
	SUB33	Aguila/Carefree	26	0.047	30.4	0.01		
		Aguila/Carefree	31	0.001	0.9	0.33	35.0	100
		Aguila/Carefree	34	0.023	15.0	0.23		
		Aguila/Carefree	66	0.083	53.7	0.23		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB33	Aguila/Carefree	26	0.019	66.1	0.01		
	Aguila/Carefree	34	0.001	1.8	0.23		
	Aguila/Carefree	66	0.009	32.1	0.23		
SUB33	Aguila/Carefree	26	0.004	11.3	0.01		
	Aguila/Carefree	31	0.002	6.8	0.33	35.0	100
	Aguila/Carefree	66	0.029	82.0	0.23		
SUB33E	Aguila/Carefree	26	0.032	16.3	0.01		
	Aguila/Carefree	31	0.079	40.8	0.33	35.0	100
	Aguila/Carefree	66	0.012	6.1	0.23		
	Aguila/Carefree	72	0.072	36.9	0.09	30.0	100
SUB33F	Aguila/Carefree	26	0.005	23.8	0.01		
	Aguila/Carefree	66	0.016	76.2	0.23		
SUB-45	Aguila/Carefree	26	0.049	55.7	0.01		
	Aguila/Carefree	34	0.039	44.3	0.23		
SUB46A	Aguila/Carefree	26	0.009	26.7	0.01		
	Aguila/Carefree	34	0.024	73.3	0.23		
SUB46	Aguila/Carefree	26	0.008	25.4	0.01		
	Aguila/Carefree	34	0.023	74.6	0.23		
SUB-47	Aguila/Carefree	26	0.016	8.7	0.01		
	Aguila/Carefree	34	0.120	67.6	0.23		
	Aguila/Carefree	93	0.042	23.7	0.33		
SUB-57	Aguila/Carefree	6	0.001	1.7	0.62		
	Aguila/Carefree	33	0.037	55.4	0.23		
	Aguila/Carefree	72	0.029	43.0	0.09	30.0	100
SUB-58	Aguila/Carefree	6	0.011	10.2	0.62		
	Aguila/Carefree	12	0.008	7.6	0.01		
	Aguila/Carefree	33	0.087	79.0	0.23		
	Aguila/Carefree	72	0.004	3.3	0.09	30.0	100
SUB-59	Aguila/Carefree	6	0.045	55.0	0.62		
	Aguila/Carefree	12	0.002	2.5	0.01		
	Aguila/Carefree	33	0.002	1.9	0.23		
	Aguila/Carefree	96	0.033	40.5	0.07		
SUB-60	Aguila/Carefree	6	0.015	16.6	0.62		
	Aguila/Carefree	96	0.077	83.4	0.07		
SUB-61	Aguila/Carefree	6	0.005	3.7	0.62		
	Aguila/Carefree	12	0.000	0.3	0.01		
	Aguila/Carefree	33	0.000	0.1	0.23		
	Aguila/Carefree	96	0.136	95.9	0.07		
SUB-62	Aguila/Carefree	3	0.003	3.2	0.58		
	Aguila/Carefree	6	0.005	5.4	0.62		
	Aguila/Carefree	12	0.001	0.8	0.01		
	Aguila/Carefree	96	0.089	90.6	0.07		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB-63	Aguila/Carefree	3	0.001	0.9	0.58		
	Aguila/Carefree	96	0.081	98.8	0.07		
	Aguila/Carefree	110	0.000	0.4	0.13		
SUB-64	Aguila/Carefree	3	0.033	46.2	0.58		
	Aguila/Carefree	12	0.023	32.3	0.01		
	Aguila/Carefree	44	0.009	12.4	0.03		
	Aguila/Carefree	96	0.001	1.4	0.07		
	Aguila/Carefree	110	0.005	7.6	0.13		
SUB-69	Aguila/Carefree	6	0.033	6.9	0.62		
	Aguila/Carefree	33	0.196	41.5	0.23		
	Aguila/Carefree	72	0.243	51.6	0.09	30.0	100
SUB-70	Aguila/Carefree	33	0.019	26.5	0.23		
	Aguila/Carefree	72	0.053	73.5	0.09	30.0	100
SUB-71	Aguila/Carefree	33	0.012	33.6	0.23		
	Aguila/Carefree	72	0.023	66.4	0.09	30.0	100
SUB-72	Aguila/Carefree	33	0.052	33.3	0.23		
	Aguila/Carefree	72	0.103	66.7	0.09	30.0	100
SUB-73	Aguila/Carefree	33	0.016	28.5	0.23		
	Aguila/Carefree	72	0.040	71.5	0.09	30.0	100
SUB-74	Aguila/Carefree	33	0.037	23.4	0.23		
	Aguila/Carefree	72	0.120	76.6	0.09	30.0	100
SUB-75	Aguila/Carefree	33	0.009	55.5	0.23		
	Aguila/Carefree	72	0.007	44.5	0.09	30.0	100
SUB-76	Aguila/Carefree	33	0.018	88.7	0.23		
	Aguila/Carefree	72	0.002	11.3	0.09	30.0	100

* Custom Value (not default value)

Sub Basin Data

 7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-13	0.54	1.26	262.9	247.0	Natural	0.045	0.35	0.37	5.20	0.25	4	**Tc (hrs)**	0.58	0.39	0.33	0.28	0.26	0.25
												Vel (f/s)	3.21	4.71	5.55	6.53	7.03	7.51
												R (hrs)	0.34	0.22	0.19	0.16	0.14	0.13
SUB14A	0.18	0.97	227.4	224.0	Natural	0.052	0.35	0.30	8.00	0.08	3	**Tc (hrs)**	0.42	0.32	0.28	0.26	0.24	0.23
												Vel (f/s)	3.41	4.49	5.03	5.51	5.88	6.11
												R (hrs)	0.36	0.27	0.24	0.21	0.20	0.19
SUB14B	0.27	1.51	192.7	192.7	Natural	0.049	0.35	0.35	7.00	0.12		**Tc (hrs)**	0.68	0.49	0.42	0.36	0.33	0.31
												Vel (f/s)	3.26	4.50	5.26	6.10	6.65	7.08
												R (hrs)	0.71	0.50	0.42	0.35	0.32	0.30
SUB14C	0.46	1.74	353.6	279.0	Natural	0.046	0.35	0.32	7.60	0.10	1	**Tc (hrs)**	0.57	0.42	0.37	0.32	1.50	0.28
												Vel (f/s)	4.47	6.06	6.95	7.95	1.62	9.15
												R (hrs)	0.48	0.34	0.30	0.26	1.49	0.22
SUB19A	0.11	0.86	367.6	282.0	Natural	0.055	0.35	0.32	7.60	0.10	19	**Tc (hrs)**	0.35	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	3.65	4.65	5.05	5.51	5.81	6.06
												R (hrs)	0.35	0.27	0.25	0.22	0.21	0.20
SUB19B	0.26	1.36	617.9	315.0	Natural	0.053	0.35	0.35	7.00	0.12	29	**Tc (hrs)**	0.44	0.35	0.32	0.28	0.26	0.25
												Vel (f/s)	4.51	5.70	6.29	7.05	7.58	7.98
												R (hrs)	0.41	0.32	0.29	0.25	0.23	0.22
SUB19C	0.11	0.84	450.7	299.0	Natural	0.056	0.35	0.33	7.30	0.11	30	**Tc (hrs)**	0.33	0.26	0.24	0.23	0.21	0.20
												Vel (f/s)	3.74	4.68	5.09	5.48	5.78	6.04
												R (hrs)	0.34	0.26	0.24	0.22	0.21	0.20
SUB33A	0.06	0.37	377.4	284.0	Natural	0.065	0.31	0.20	7.00	0.11	7	**Tc (hrs)**	0.22	0.19	0.18	0.16	0.15	0.15
												Vel (f/s)	2.50	2.89	3.10	3.33	3.52	3.62
												R (hrs)	0.16	0.14	0.13	0.12	0.11	0.11
SUB33B	0.16	0.93	380.4	285.0	Natural	0.059	0.32	0.22	7.30	0.10	3	**Tc (hrs)**	0.38	0.30	0.27	0.25	0.23	0.23
												Vel (f/s)	3.60	4.55	5.03	5.54	5.85	6.06

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.34	0.27	0.24	0.21	0.20	0.19
SUB33C	0.03	0.40	126.2	126.2	Natural	0.066	0.31	0.15	10.10	0.03	4	**Tc (hrs)**	0.29	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	2.04	2.38	2.52	2.70	2.88	2.99
												R (hrs)	0.34	0.29	0.27	0.25	0.23	0.22
SUB33D	0.04	0.60	57.0	57.0	Natural	0.067	0.33	0.32	5.70	0.20	5	**Tc (hrs)**	0.78	0.57	0.49	0.41	0.38	0.35
												Vel (f/s)	1.14	1.54	1.80	2.13	2.35	2.51
												R (hrs)	1.25	0.89	0.75	0.62	0.56	0.52
SUB33E	0.19	0.91	273.5	253.0	Natural	0.054	0.34	0.33	6.80	0.13	26	**Tc (hrs)**	0.37	0.30	0.27	0.24	0.23	0.22
												Vel (f/s)	3.60	4.51	5.00	5.52	5.83	6.04
												R (hrs)	0.29	0.23	0.20	0.18	0.17	0.16
SUB33F	0.02	0.33	219.5	218.0	Natural	0.070	0.31	0.20	6.80	0.12	4	**Tc (hrs)**	0.23	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	2.08	2.42	2.57	2.77	2.90	3.06
												R (hrs)	0.27	0.23	0.22	0.20	0.19	0.18
SUB-45	0.09	1.08	208.0	207.0	Natural	0.058	0.34	0.24	9.70	0.05	1	**Tc (hrs)**	0.47	0.37	0.34	0.30	0.28	0.27
												Vel (f/s)	3.39	4.27	4.69	5.28	5.60	5.93
												R (hrs)	0.68	0.52	0.47	0.41	0.39	0.36
SUB-47	0.18	1.02	154.3	154.3	Natural	0.056	0.32	0.29	5.40	0.21	3	**Tc (hrs)**	0.62	0.45	0.39	0.34	0.31	0.29
												Vel (f/s)	2.41	3.30	3.86	4.43	4.78	5.12
												R (hrs)	0.59	0.42	0.35	0.30	0.28	0.26
SUB-57	0.07	0.46	921.7	315.0	Natural	0.062	0.33	0.33	5.80	0.19	15	**Tc (hrs)**	0.25	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	2.74	3.31	3.51	3.86	4.04	4.27
												R (hrs)	0.20	0.16	0.15	0.14	0.13	0.12
SUB-58	0.11	0.72	396.1	295.0	Natural	0.058	0.33	0.33	5.30	0.23	3	**Tc (hrs)**	0.38	0.27	0.24	0.22	0.21	0.20
												Vel (f/s)	2.82	3.96	4.36	4.78	5.08	5.39
												R (hrs)	0.34	0.23	0.21	0.19	0.18	0.16

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-59	0.08	1.11	101.5	101.5	Natural	0.062	0.31	0.27	5.00	0.30	10	**Tc (hrs)**	0.88	0.66	0.57	0.48	0.43	0.40
												Vel (f/s)	1.84	2.47	2.87	3.43	3.76	4.07
												R (hrs)	1.46	1.05	0.89	0.73	0.66	0.61
SUB-60	0.09	1.00	112.7	112.7	Natural	0.060	0.32	0.23	7.00	0.13	9	**Tc (hrs)**	0.65	0.50	0.44	0.39	0.36	0.34
												Vel (f/s)	2.24	2.93	3.35	3.78	4.10	4.34
												R (hrs)	0.90	0.67	0.58	0.50	0.46	0.43
SUB-61	0.14	1.40	119.4	119.4	Natural	0.058	0.31	0.17	7.60	0.10	11	**Tc (hrs)**	0.74	0.57	0.51	0.45	0.42	0.40
												Vel (f/s)	2.78	3.60	4.04	4.56	4.88	5.19
												R (hrs)	1.05	0.79	0.70	0.61	0.56	0.53
SUB-62	0.10	0.87	116.8	116.8	Natural	0.061	0.32	0.22	7.60	0.10	4	**Tc (hrs)**	0.58	0.44	0.39	0.35	0.33	0.30
												Vel (f/s)	2.22	2.91	3.29	3.69	3.93	4.20
												R (hrs)	0.67	0.50	0.43	0.38	0.36	0.33
SUB-63	0.08	0.87	121.4	121.4	Natural	0.059	0.31	0.18	8.00	0.08	5	**Tc (hrs)**	0.51	0.40	0.37	0.33	0.31	0.29
												Vel (f/s)	2.49	3.16	3.48	3.88	4.14	4.37
												R (hrs)	0.66	0.50	0.45	0.40	0.37	0.35
SUB-64	0.07	0.81	111.9	111.9	Natural	0.060	0.31	0.18	7.30	0.10	4	**Tc (hrs)**	0.53	0.41	0.37	0.33	0.31	0.29
												Vel (f/s)	2.26	2.91	3.24	3.61	3.86	4.07
												R (hrs)	0.69	0.52	0.46	0.41	0.38	0.36
SUB12A	0.09	0.77	528.1	306.0	Natural	0.058	0.34	0.35	6.60	0.14	21	**Tc (hrs)**	0.33	0.26	0.24	0.22	0.21	0.20
												Vel (f/s)	3.39	4.38	4.75	5.11	5.43	5.65
												R (hrs)	0.35	0.27	0.24	0.22	0.21	0.20
SUB-69	0.47	1.61	871.7	315.0	Natural	0.052	0.32	0.31	6.00	0.19	23	**Tc (hrs)**	0.52	0.41	0.36	0.32	0.30	0.28
												Vel (f/s)	4.53	5.79	6.60	7.45	7.98	8.59
												R (hrs)	0.40	0.31	0.27	0.23	0.22	0.20
SUB-70	0.07	0.85	1535.4	315.0	Natural	0.061	0.34	0.33	6.60	0.15	25	**Tc (hrs)**	0.36	0.28	0.25	0.23	0.22	0.21
												Vel (f/s)	3.48	4.41	4.91	5.35	5.64	5.85

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	0.47	0.36	0.32	0.29	0.27	0.26
SUB-71	0.04	0.41	854.4	315.0	Natural	0.063	0.35	0.36	6.60	0.15	22	**Tc (hrs)**	0.23	0.20	0.18	0.17	0.16	0.15
												Vel (f/s)	2.63	3.07	3.36	3.60	3.81	4.01
												R (hrs)	0.24	0.20	0.18	0.17	0.16	0.15
SUB-72	0.16	0.95	1387.8	315.0	Natural	0.056	0.34	0.33	6.60	0.15	23	**Tc (hrs)**	0.37	0.29	0.26	0.24	0.23	0.22
												Vel (f/s)	3.76	4.84	5.40	5.85	6.19	6.42
												R (hrs)	0.34	0.26	0.23	0.21	0.20	0.19
SUB-73	0.06	0.52	676.9	315.0	Natural	0.059	0.34	0.36	6.60	0.15	24	**Tc (hrs)**	0.25	0.21	0.20	0.18	0.17	0.16
												Vel (f/s)	3.05	3.58	3.89	4.26	4.46	4.68
												R (hrs)	0.24	0.20	0.19	0.17	0.16	0.15
SUB-74	0.16	0.93	1154.3	315.0	Natural	0.058	0.32	0.28	6.80	0.14	31	**Tc (hrs)**	0.35	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	3.90	4.82	5.29	5.73	6.06	6.29
												R (hrs)	0.31	0.25	0.22	0.20	0.19	0.18
SUB-75	0.02	0.34	970.6	315.0	Natural	0.066	0.35	0.40	6.00	0.18	13	**Tc (hrs)**	0.23	0.18	0.17	0.16	0.15	0.14
												Vel (f/s)	2.22	2.72	2.92	3.16	3.32	3.51
												R (hrs)	0.32	0.25	0.23	0.21	0.20	0.19
SUB-76	0.02	0.34	440.5	299.0	Natural	0.068	0.31	0.28	5.20	0.24	7	**Tc (hrs)**	0.23	0.19	0.18	0.16	0.15	0.15
												Vel (f/s)	2.18	2.60	2.85	3.06	3.24	3.42
												R (hrs)	0.28	0.23	0.21	0.19	0.18	0.17
SUB46A	0.03	0.48	269.7	251.0	Natural	0.065	0.34	0.31	7.00	0.12	1	**Tc (hrs)**	0.28	0.23	0.21	0.20	0.19	0.18
												Vel (f/s)	2.49	3.07	3.31	3.59	3.74	3.93
												R (hrs)	0.36	0.29	0.26	0.24	0.23	0.22
SUB46B	0.03	0.56	243.2	237.0	Natural	0.064	0.34	0.33	7.00	0.12	1	**Tc (hrs)**	0.33	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	2.47	3.23	3.53	3.78	4.03	4.19
												R (hrs)	0.50	0.37	0.34	0.31	0.29	0.28

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-18	0.39	1.47	310.2	266.0	Natural	0.051	0.35	0.33	7.30	0.11	30	**Tc (hrs)**	0.48	0.38	0.35	0.31	0.29	0.27
												Vel (f/s)	4.46	5.63	6.23	7.00	7.49	7.96
												R (hrs)	0.39	0.30	0.27	0.24	0.22	0.20

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB12A	V.L.D.R.	0.010	11.1	Normal	20.0	5	0.30	0.050	Low	0.069
	DESERT	0.079	88.9	Dry	25.0		0.35	0.030	Low	0.057
SUB-13	V.L.D.R.	0.007	1.3	Normal	20.0	5	0.30	0.050	Low	0.071
	DESERT	0.534	98.7	Dry	25.0		0.35	0.030	Low	0.045
SUB14A	DESERT	0.180	100.0	Dry	25.0		0.35	0.030	Low	0.052
SUB14B	DESERT	0.267	100.0	Dry	25.0		0.35	0.030	Low	0.049
SUB14C	DESERT	0.458	100.0	Dry	25.0		0.35	0.030	Low	0.046
SUB-18	DESERT	0.083	21.5	Dry	25.0		0.35	0.030	Low	0.056
	DESERT	0.303	78.5	Dry	25.0		0.35	0.030	Low	0.049
SUB19A	DESERT	0.111	100.0	Dry	25.0		0.35	0.030	Low	0.055
SUB19B	DESERT	0.143	55.6	Dry	25.0		0.35	0.030	Low	0.053
	DESERT	0.114	44.4	Dry	25.0		0.35	0.030	Low	0.054
SUB19C	DESERT	0.097	92.8	Dry	25.0		0.35	0.030	Low	0.055
	DESERT	0.008	7.2	Dry	25.0		0.35	0.030	Low	0.071
SUB33A	V.L.D.R.	0.029	53.0	Normal	20.0	5	0.30	0.050	Low	0.062
	V.L.D.R.	0.013	22.6	Normal	20.0	5	0.30	0.050	Low	0.068
	DESERT	0.014	24.4	Dry	25.0		0.35	0.030	Low	0.067
SUB33B	V.L.D.R.	0.042	27.1	Normal	20.0	5	0.30	0.050	Low	0.060
	V.L.D.R.	0.050	32.3	Normal	20.0	5	0.30	0.050	Low	0.059
	DESERT	0.063	40.6	Dry	25.0		0.35	0.030	Low	0.058
SUB33C	V.L.D.R.	0.023	82.1	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.005	17.9	Dry	25.0		0.35	0.030	Low	0.073
SUB33D	V.L.D.R.	0.004	12.4	Normal	20.0	5	0.30	0.050	Low	0.074
	V.L.D.R.	0.013	37.3	Normal	20.0	5	0.30	0.050	Low	0.067
	DESERT	0.018	50.3	Dry	25.0		0.35	0.030	Low	0.065

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB33E	V.L.D.R.	0.012	6.2	Normal	20.0	5	0.30	0.050	Low	0.068
	V.L.D.R.	0.016	8.4	Normal	20.0	5	0.30	0.050	Low	0.066
	DESERT	0.166	85.4	Dry	25.0		0.35	0.030	Low	0.052
SUB33F	V.L.D.R.	0.013	63.0	Normal	20.0	5	0.30	0.050	Low	0.067
	V.L.D.R.	0.004	19.0	Normal	20.0	5	0.30	0.050	Low	0.074
	DESERT	0.004	18.0	Dry	25.0		0.35	0.030	Low	0.075
SUB-45	V.L.D.R.	0.009	10.3	Normal	20.0	5	0.30	0.050	Low	0.069
	DESERT	0.079	89.7	Dry	25.0		0.35	0.030	Low	0.057
SUB46A	V.L.D.R.	0.007	20.5	Normal	20.0	5	0.30	0.050	Low	0.071
	DESERT	0.026	79.5	Dry	25.0		0.35	0.030	Low	0.063
SUB46B	V.L.D.R.	0.004	11.6	Normal	20.0	5	0.30	0.050	Low	0.075
	DESERT	0.027	88.4	Dry	25.0		0.35	0.030	Low	0.063
SUB-47	V.L.D.R.	0.122	68.7	Normal	20.0	5	0.30	0.050	Low	0.054
	DESERT	0.056	31.3	Dry	25.0		0.35	0.030	Low	0.059
SUB-57	V.L.D.R.	0.027	40.0	Normal	20.0	5	0.30	0.050	Low	0.063
	DESERT	0.040	60.0	Dry	25.0		0.35	0.030	Low	0.061
SUB-58	V.L.D.R.	0.037	33.8	Normal	20.0	5	0.30	0.050	Low	0.061
	DESERT	0.073	66.2	Dry	25.0		0.35	0.030	Low	0.057
SUB-59	V.L.D.R.	0.019	23.2	Normal	20.0	5	0.30	0.050	Low	0.065
	L.D.R.	0.049	59.4	Normal	50.0	15	0.30	0.050	Low	0.059
	DESERT	0.014	17.5	Dry	25.0		0.35	0.030	Low	0.067
SUB-60	L.D.R.	0.053	57.3	Normal	50.0	15	0.30	0.050	Low	0.059
	DESERT	0.036	39.3	Dry	25.0		0.35	0.030	Low	0.061
	V.L.D.R.	0.003	3.4	Normal	20.0	5	0.30	0.050	Low	0.076
SUB-61	DESERT	0.018	12.5	Dry	25.0		0.35	0.030	Low	0.065
	V.L.D.R.	0.032	22.6	Normal	20.0	5	0.30	0.050	Low	0.062

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-61	L.D.R.	0.092	64.8	Normal	50.0	15	0.30	0.050	Low	0.056
	COMM	0.000	0.1	Normal	75.0	80	0.10	0.020	Min	0.047
SUB-62	L.D.R.	0.015	15.0	Normal	50.0	15	0.30	0.050	Low	0.067
	V.L.D.R.	0.041	41.5	Normal	20.0	5	0.30	0.050	Low	0.061
	DESERT	0.043	43.5	Dry	25.0		0.35	0.030	Low	0.060
SUB-63	DESERT	0.016	19.5	Dry	25.0		0.35	0.030	Low	0.066
	V.L.D.R.	0.065	79.7	Normal	20.0	5	0.30	0.050	Low	0.058
	COMM	0.001	0.9	Normal	75.0	80	0.10	0.020	Min	0.042
SUB-64	V.L.D.R.	0.059	83.9	Normal	20.0	5	0.30	0.050	Low	0.058
	V.L.D.R.	0.000	0.3	Normal	20.0	5	0.30	0.050	Low	0.092
	DESERT	0.011	15.8	Dry	25.0		0.35	0.030	Low	0.068
SUB-69	V.L.D.R.	0.049	10.5	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.014	2.9	Normal	20.0	5	0.30	0.050	Low	0.067
	V.L.D.R.	0.001	0.2	Normal	20.0	5	0.30	0.050	Low	0.082
	L.D.R.	0.209	44.3	Normal	50.0	15	0.30	0.050	Low	0.051
	DESERT	0.198	42.1	Dry	25.0		0.35	0.030	Low	0.051
SUB-70	V.L.D.R.	0.006	8.1	Normal	20.0	5	0.30	0.050	Low	0.072
	L.D.R.	0.010	14.3	Normal	50.0	15	0.30	0.050	Low	0.069
	DESERT	0.056	77.6	Dry	25.0		0.35	0.030	Low	0.059
SUB-71	M.F.R.	0.001	3.5	Normal	50.0	45	0.25	0.050	Low	0.082
	L.D.R.	0.000	1.2	Normal	50.0	15	0.30	0.050	Low	0.088
	DESERT	0.033	95.4	Dry	25.0		0.35	0.030	Low	0.062
SUB-72	DESERT	0.117	75.2	Dry	25.0		0.35	0.030	Low	0.054
	V.L.D.R.	0.004	2.6	Normal	20.0	5	0.30	0.050	Low	0.074
	L.D.R.	0.034	22.2	Normal	50.0	15	0.30	0.050	Low	0.062
SUB-73	M.F.R.	0.001	2.3	Normal	50.0	45	0.25	0.050	Low	0.081
	COMM	0.001	1.4	Normal	75.0	80	0.10	0.020	Min	0.042

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-73	DESERT	0.054	96.2	Dry	25.0		0.35	0.030	Low	0.059
SUB-74	COMM	0.004	2.6	Normal	75.0	80	0.10	0.020	Min	0.037
	L.D.R.	0.055	35.3	Normal	50.0	15	0.30	0.050	Low	0.059
	L.D.R.	0.004	2.4	Normal	50.0	15	0.30	0.050	Low	0.075
	V.L.D.R.	0.006	3.5	Normal	20.0	5	0.30	0.050	Low	0.072
	DESERT	0.088	56.2	Dry	25.0		0.35	0.030	Low	0.056
SUB-75	DESERT	0.016	100.0	Dry	25.0		0.35	0.030	Low	0.066
SUB-76	DESERT	0.004	21.3	Dry	25.0		0.35	0.030	Low	0.074
	V.L.D.R.	0.016	78.7	Normal	20.0	5	0.30	0.050	Low	0.066

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R14C	4	0.053	0.045	0.053	3270	0.0130	246.00	**Sta**	0.0	4.8	9.6	14.5	39.4	78.3	94.4	110.1
									Elev	246.0	244.0	242.0	240.0	240.0	242.0	244.0	246.0
01		1	0.053	0.045	0.053	477	0.0168	192.00	**Sta**	0.0	15.0	30.0	40.5	41.5	52.5	73.7	108.0
									Elev	192.0	191.0	190.0	188.0	188.0	190.0	190.2	192.0
01	R19C	5	0.053	0.045	0.053	4116	0.0114	204.00	**Sta**	0.0	47.6	66.1	87.7	106.8	112.7	131.1	138.9
									Elev	204.0	202.0	200.0	198.0	198.0	200.0	202.0	204.0
01		1	0.053	0.045	0.053	564	0.0390	262.00	**Sta**	0.0	8.2	16.6	27.9	50.0	57.9	65.9	73.0
									Elev	262.0	260.0	258.0	256.0	256.0	258.0	260.0	262.0
01	R18	1	0.053	0.045	0.053	2572	0.0233	146.00	**Sta**	0.0	2.6	5.9	9.9	20.8	24.7	27.3	30.4
									Elev	146.0	144.0	142.0	140.0	140.0	142.0	144.0	146.0
01		1	0.053	0.045	0.053	403	0.0546	92.00	**Sta**	0.0	10.7	21.5	44.3	64.8	88.0	122.0	149.0
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R33D	4	0.053	0.045	0.053	1637	0.0104	188.00	**Sta**	0.0	49.3	60.6	71.9	83.0	133.7	175.9	214.2
									Elev	188.0	186.0	184.0	182.0	182.0	184.0	186.0	188.0
01		1	0.053	0.045	0.053	455	0.0132	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R33C	2	0.053	0.045	0.053	1320	0.0159	158.00	**Sta**	0.0	6.5	14.3	25.5	44.2	52.6	58.3	64.3
									Elev	158.0	156.0	154.0	152.0	152.0	154.0	156.0	158.0
01	R45	10	0.053	0.045	0.053	4898	0.0218	192.00	**Sta**	0.0	26.3	64.2	107.1	146.4	157.7	166.9	176.3
									Elev	192.0	190.0	188.0	186.0	186.0	188.0	190.0	192.0
01	R76	3	0.053	0.045	0.053	919	0.0152	114.00	**Sta**	0.0	44.9	63.2	67.9	71.3	107.2	136.4	159.2
									Elev	114.0	112.0	110.0	108.0	108.0	110.0	112.0	114.0
01	R74	2	0.053	0.045	0.053	1412	0.0212	92.00	**Sta**	0.0	25.4	69.1	79.9	84.8	92.1	99.9	130.3
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R72	4	0.053	0.045	0.053	3492	0.0218	6.00	**Sta**	0.0	21.3	57.8	75.7	77.8	85.0	92.5	99.9
									Elev	5.0	4.0	2.0	0.0	0.0	2.0	4.0	6.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R69	3	0.053	0.045	0.053	2610	0.0146	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R60	1	0.053	0.045	0.053	420	0.0143	960.00	**Sta**	0.0	42.8	63.6	82.6	106.8	117.5	120.1	182.8
									Elev	964.0	962.0	960.0	958.0	958.0	960.0	960.0	960.0
01	R61	1	0.053	0.045	0.053	780	0.0103	950.00	**Sta**	0.0	7.4	14.6	36.2	47.1	62.9	69.6	76.4
									Elev	950.0	948.0	946.0	946.0	946.0	946.0	948.0	950.0
01	R63	2	0.053	0.045	0.053	2145	0.0196	922.00	**Sta**	0.0	4.2	8.2	12.2	36.3	41.2	45.8	50.4
									Elev	922.0	920.0	918.0	916.0	916.0	918.0	920.0	922.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB12A	Aguila/Carefree	8	0.000	0.1	0.96		
		Aguila/Carefree	26	0.001	1.1	0.01		
		Aguila/Carefree	66	0.029	31.9	0.23		
		Aguila/Carefree	72	0.060	66.9	0.09	30.0	100
	SUB-13	Aguila/Carefree	33	0.076	14.0	0.23		
		Aguila/Carefree	34	0.119	22.0	0.23		
		Aguila/Carefree	66	0.245	45.2	0.23		
		Aguila/Carefree	72	0.076	14.0	0.09	30.0	100
		Aguila/Carefree	93	0.026	4.8	0.33		
	SUB14A	Aguila/Carefree	26	0.061	33.6	0.01		
		Aguila/Carefree	33	0.011	5.9	0.23		
		Aguila/Carefree	34	0.004	2.3	0.23		
		Aguila/Carefree	66	0.071	39.3	0.23		
		Aguila/Carefree	72	0.021	11.5	0.09	30.0	100
		Aguila/Carefree	93	0.012	6.6	0.33		
		Aguila/Carefree	95	0.001	0.7	0.04		
	SUB14	Aguila/Carefree	26	0.038	14.3	0.01		
		Aguila/Carefree	66	0.163	61.2	0.23		
		Aguila/Carefree	72	0.001	0.2	0.09	30.0	100
		Aguila/Carefree	95	0.065	24.4	0.04		
	SUB14	Aguila/Carefree	26	0.076	16.7	0.01		
		Aguila/Carefree	34	0.000		0.23		
		Aguila/Carefree	66	0.228	49.6	0.23		
		Aguila/Carefree	72	0.016	3.4	0.09	30.0	100
		Aguila/Carefree	95	0.139	30.3	0.04		
	SUB-18	Aguila/Carefree	66	0.002	0.5	0.23		
		Aguila/Carefree	72	0.383	99.5	0.09	30.0	100
	SUB19A	Aguila/Carefree	26	0.016	14.5	0.01		
		Aguila/Carefree	66	0.024	21.9	0.23		
		Aguila/Carefree	72	0.070	63.7	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.013	5.0	0.23		
		Aguila/Carefree	72	0.244	95.0	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.000	0.1	0.23		
		Aguila/Carefree	72	0.105	99.9	0.09	30.0	100
	SUB33A	Aguila/Carefree	26	0.012	22.5	0.01		
		Aguila/Carefree	34	0.013	24.3	0.23		
		Aguila/Carefree	66	0.024	42.8	0.23		
		Aguila/Carefree	72	0.006	10.5	0.09	30.0	100
	SUB33	Aguila/Carefree	26	0.047	30.4	0.01		
		Aguila/Carefree	31	0.001	0.9	0.33	35.0	100
		Aguila/Carefree	34	0.023	15.0	0.23		
		Aguila/Carefree	66	0.083	53.7	0.23		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB33	Aguila/Carefree	26	0.019	66.1	0.01		
	Aguila/Carefree	34	0.001	1.8	0.23		
	Aguila/Carefree	66	0.009	32.1	0.23		
SUB33	Aguila/Carefree	26	0.004	11.3	0.01		
	Aguila/Carefree	31	0.002	6.8	0.33	35.0	100
	Aguila/Carefree	66	0.029	82.0	0.23		
SUB33E	Aguila/Carefree	26	0.032	16.3	0.01		
	Aguila/Carefree	31	0.079	40.8	0.33	35.0	100
	Aguila/Carefree	66	0.012	6.1	0.23		
	Aguila/Carefree	72	0.072	36.9	0.09	30.0	100
SUB33F	Aguila/Carefree	26	0.005	23.8	0.01		
	Aguila/Carefree	66	0.016	76.2	0.23		
SUB-45	Aguila/Carefree	26	0.049	55.7	0.01		
	Aguila/Carefree	34	0.039	44.3	0.23		
SUB46A	Aguila/Carefree	26	0.009	26.7	0.01		
	Aguila/Carefree	34	0.024	73.3	0.23		
SUB46	Aguila/Carefree	26	0.008	25.4	0.01		
	Aguila/Carefree	34	0.023	74.6	0.23		
SUB-47	Aguila/Carefree	26	0.016	8.7	0.01		
	Aguila/Carefree	34	0.120	67.6	0.23		
	Aguila/Carefree	93	0.042	23.7	0.33		
SUB-57	Aguila/Carefree	6	0.001	1.7	0.62		
	Aguila/Carefree	33	0.037	55.4	0.23		
	Aguila/Carefree	72	0.029	43.0	0.09	30.0	100
SUB-58	Aguila/Carefree	6	0.011	10.2	0.62		
	Aguila/Carefree	12	0.008	7.6	0.01		
	Aguila/Carefree	33	0.087	79.0	0.23		
	Aguila/Carefree	72	0.004	3.3	0.09	30.0	100
SUB-59	Aguila/Carefree	6	0.045	55.0	0.62		
	Aguila/Carefree	12	0.002	2.5	0.01		
	Aguila/Carefree	33	0.002	1.9	0.23		
	Aguila/Carefree	96	0.033	40.5	0.07		
SUB-60	Aguila/Carefree	6	0.015	16.6	0.62		
	Aguila/Carefree	96	0.077	83.4	0.07		
SUB-61	Aguila/Carefree	6	0.005	3.7	0.62		
	Aguila/Carefree	12	0.000	0.3	0.01		
	Aguila/Carefree	33	0.000	0.1	0.23		
	Aguila/Carefree	96	0.136	95.9	0.07		
SUB-62	Aguila/Carefree	3	0.003	3.2	0.58		
	Aguila/Carefree	6	0.005	5.4	0.62		
	Aguila/Carefree	12	0.001	0.8	0.01		
	Aguila/Carefree	96	0.089	90.6	0.07		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB-63	Aguila/Carefree	3	0.001	0.9	0.58		
	Aguila/Carefree	96	0.081	98.8	0.07		
	Aguila/Carefree	110	0.000	0.4	0.13		
SUB-64	Aguila/Carefree	3	0.033	46.2	0.58		
	Aguila/Carefree	12	0.023	32.3	0.01		
	Aguila/Carefree	44	0.009	12.4	0.03		
	Aguila/Carefree	96	0.001	1.4	0.07		
	Aguila/Carefree	110	0.005	7.6	0.13		
SUB-69	Aguila/Carefree	6	0.033	6.9	0.62		
	Aguila/Carefree	33	0.196	41.5	0.23		
	Aguila/Carefree	72	0.243	51.6	0.09	30.0	100
SUB-70	Aguila/Carefree	33	0.019	26.5	0.23		
	Aguila/Carefree	72	0.053	73.5	0.09	30.0	100
SUB-71	Aguila/Carefree	33	0.012	33.6	0.23		
	Aguila/Carefree	72	0.023	66.4	0.09	30.0	100
SUB-72	Aguila/Carefree	33	0.052	33.3	0.23		
	Aguila/Carefree	72	0.103	66.7	0.09	30.0	100
SUB-73	Aguila/Carefree	33	0.016	28.5	0.23		
	Aguila/Carefree	72	0.040	71.5	0.09	30.0	100
SUB-74	Aguila/Carefree	33	0.037	23.4	0.23		
	Aguila/Carefree	72	0.120	76.6	0.09	30.0	100
SUB-75	Aguila/Carefree	33	0.009	55.5	0.23		
	Aguila/Carefree	72	0.007	44.5	0.09	30.0	100
SUB-76	Aguila/Carefree	33	0.018	88.7	0.23		
	Aguila/Carefree	72	0.002	11.3	0.09	30.0	100

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-13	0.54	1.26	262.9	247.0	Natural	0.045	0.35	0.37	5.20	0.25	4	**Tc (hrs)**	0.58	0.39	0.33	0.28	0.26	0.25
												Vel (f/s)	3.21	4.71	5.55	6.53	7.03	7.51
												R (hrs)	0.34	0.22	0.19	0.16	0.14	0.13
SUB14A	0.18	0.97	227.4	224.0	Natural	0.052	0.35	0.30	8.00	0.08	3	**Tc (hrs)**	0.42	0.32	0.28	0.26	0.24	0.23
												Vel (f/s)	3.41	4.49	5.03	5.51	5.88	6.11
												R (hrs)	0.36	0.27	0.24	0.21	0.20	0.19
SUB14B	0.27	1.51	192.7	192.7	Natural	0.049	0.35	0.35	7.00	0.12		**Tc (hrs)**	0.68	0.49	0.42	0.36	0.33	0.31
												Vel (f/s)	3.26	4.50	5.26	6.10	6.65	7.08
												R (hrs)	0.71	0.50	0.42	0.35	0.32	0.30
SUB14C	0.46	1.74	353.6	279.0	Natural	0.046	0.35	0.32	7.60	0.10	1	**Tc (hrs)**	0.57	0.42	0.37	0.32	1.50	0.28
												Vel (f/s)	4.47	6.06	6.95	7.95	1.62	9.15
												R (hrs)	0.48	0.34	0.30	0.26	1.49	0.22
SUB19A	0.11	0.86	367.6	282.0	Natural	0.055	0.35	0.32	7.60	0.10	19	**Tc (hrs)**	0.35	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	3.65	4.65	5.05	5.51	5.81	6.06
												R (hrs)	0.35	0.27	0.25	0.22	0.21	0.20
SUB19B	0.26	1.36	617.9	315.0	Natural	0.053	0.35	0.35	7.00	0.12	29	**Tc (hrs)**	0.44	0.35	0.32	0.28	0.26	0.25
												Vel (f/s)	4.51	5.70	6.29	7.05	7.58	7.98
												R (hrs)	0.41	0.32	0.29	0.25	0.23	0.22
SUB19C	0.11	0.84	450.7	299.0	Natural	0.056	0.35	0.33	7.30	0.11	30	**Tc (hrs)**	0.33	0.26	0.24	0.23	0.21	0.20
												Vel (f/s)	3.74	4.68	5.09	5.48	5.78	6.04
												R (hrs)	0.34	0.26	0.24	0.22	0.21	0.20
SUB33A	0.06	0.37	377.4	284.0	Natural	0.065	0.31	0.20	7.00	0.11	7	**Tc (hrs)**	0.22	0.19	0.18	0.16	0.15	0.15
												Vel (f/s)	2.50	2.89	3.10	3.33	3.52	3.62
												R (hrs)	0.16	0.14	0.13	0.12	0.11	0.11
SUB33B	0.16	0.93	380.4	285.0	Natural	0.059	0.32	0.22	7.30	0.10	3	**Tc (hrs)**	0.38	0.30	0.27	0.25	0.23	0.23
												Vel (f/s)	3.60	4.55	5.03	5.54	5.85	6.06

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.34	0.27	0.24	0.21	0.20	0.19
SUB33C	0.03	0.40	126.2	126.2	Natural	0.066	0.31	0.15	10.10	0.03	4	**Tc (hrs)**	0.29	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	2.04	2.38	2.52	2.70	2.88	2.99
												R (hrs)	0.34	0.29	0.27	0.25	0.23	0.22
SUB33D	0.04	0.60	57.0	57.0	Natural	0.067	0.33	0.32	5.70	0.20	5	**Tc (hrs)**	0.78	0.57	0.49	0.41	0.38	0.35
												Vel (f/s)	1.14	1.54	1.80	2.13	2.35	2.51
												R (hrs)	1.25	0.89	0.75	0.62	0.56	0.52
SUB33E	0.19	0.91	273.5	253.0	Natural	0.054	0.34	0.33	6.80	0.13	26	**Tc (hrs)**	0.37	0.30	0.27	0.24	0.23	0.22
												Vel (f/s)	3.60	4.51	5.00	5.52	5.83	6.04
												R (hrs)	0.29	0.23	0.20	0.18	0.17	0.16
SUB33F	0.02	0.33	219.5	218.0	Natural	0.070	0.31	0.20	6.80	0.12	4	**Tc (hrs)**	0.23	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	2.08	2.42	2.57	2.77	2.90	3.06
												R (hrs)	0.27	0.23	0.22	0.20	0.19	0.18
SUB-45	0.09	1.08	208.0	207.0	Natural	0.058	0.34	0.24	9.70	0.05	1	**Tc (hrs)**	0.47	0.37	0.34	0.30	0.28	0.27
												Vel (f/s)	3.39	4.27	4.69	5.28	5.60	5.93
												R (hrs)	0.68	0.52	0.47	0.41	0.39	0.36
SUB-47	0.18	1.02	154.3	154.3	Natural	0.056	0.32	0.29	5.40	0.21	3	**Tc (hrs)**	0.62	0.45	0.39	0.34	0.31	0.29
												Vel (f/s)	2.41	3.30	3.86	4.43	4.78	5.12
												R (hrs)	0.59	0.42	0.35	0.30	0.28	0.26
SUB-57	0.07	0.46	921.7	315.0	Natural	0.062	0.33	0.33	5.80	0.19	15	**Tc (hrs)**	0.25	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	2.74	3.31	3.51	3.86	4.04	4.27
												R (hrs)	0.20	0.16	0.15	0.14	0.13	0.12
SUB-58	0.11	0.72	396.1	295.0	Natural	0.058	0.33	0.33	5.30	0.23	3	**Tc (hrs)**	0.38	0.27	0.24	0.22	0.21	0.20
												Vel (f/s)	2.82	3.96	4.36	4.78	5.08	5.39
												R (hrs)	0.34	0.23	0.21	0.19	0.18	0.16

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-59	0.08	1.11	101.5	101.5	Natural	0.062	0.31	0.27	5.00	0.30	10	**Tc (hrs)**	0.88	0.66	0.57	0.48	0.43	0.40
												Vel (f/s)	1.84	2.47	2.87	3.43	3.76	4.07
												R (hrs)	1.46	1.05	0.89	0.73	0.66	0.61
SUB-60	0.09	1.00	112.7	112.7	Natural	0.060	0.32	0.23	7.00	0.13	9	**Tc (hrs)**	0.65	0.50	0.44	0.39	0.36	0.34
												Vel (f/s)	2.24	2.93	3.35	3.78	4.10	4.34
												R (hrs)	0.90	0.67	0.58	0.50	0.46	0.43
SUB-61	0.14	1.40	119.4	119.4	Natural	0.058	0.31	0.17	7.60	0.10	11	**Tc (hrs)**	0.74	0.57	0.51	0.45	0.42	0.40
												Vel (f/s)	2.78	3.60	4.04	4.56	4.88	5.19
												R (hrs)	1.05	0.79	0.70	0.61	0.56	0.53
SUB-62	0.10	0.87	116.8	116.8	Natural	0.061	0.32	0.22	7.60	0.10	4	**Tc (hrs)**	0.58	0.44	0.39	0.35	0.33	0.30
												Vel (f/s)	2.22	2.91	3.29	3.69	3.93	4.20
												R (hrs)	0.67	0.50	0.43	0.38	0.36	0.33
SUB-63	0.08	0.87	121.4	121.4	Natural	0.059	0.31	0.18	8.00	0.08	5	**Tc (hrs)**	0.51	0.40	0.37	0.33	0.31	0.29
												Vel (f/s)	2.49	3.16	3.48	3.88	4.14	4.37
												R (hrs)	0.66	0.50	0.45	0.40	0.37	0.35
SUB-64	0.07	0.81	111.9	111.9	Natural	0.060	0.31	0.18	7.30	0.10	4	**Tc (hrs)**	0.53	0.41	0.37	0.33	0.31	0.29
												Vel (f/s)	2.26	2.91	3.24	3.61	3.86	4.07
												R (hrs)	0.69	0.52	0.46	0.41	0.38	0.36
SUB12A	0.09	0.77	528.1	306.0	Natural	0.058	0.34	0.35	6.60	0.14	21	**Tc (hrs)**	0.33	0.26	0.24	0.22	0.21	0.20
												Vel (f/s)	3.39	4.38	4.75	5.11	5.43	5.65
												R (hrs)	0.35	0.27	0.24	0.22	0.21	0.20
SUB-69	0.47	1.61	871.7	315.0	Natural	0.052	0.32	0.31	6.00	0.19	23	**Tc (hrs)**	0.52	0.41	0.36	0.32	0.30	0.28
												Vel (f/s)	4.53	5.79	6.60	7.45	7.98	8.59
												R (hrs)	0.40	0.31	0.27	0.23	0.22	0.20
SUB-70	0.07	0.85	1535.4	315.0	Natural	0.061	0.34	0.33	6.60	0.15	25	**Tc (hrs)**	0.36	0.28	0.25	0.23	0.22	0.21
												Vel (f/s)	3.48	4.41	4.91	5.35	5.64	5.85

* Non default value

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.47	0.36	0.32	0.29	0.27	0.26
SUB-71	0.04	0.41	854.4	315.0	Natural	0.063	0.35	0.36	6.60	0.15	22	**Tc (hrs)**	0.23	0.20	0.18	0.17	0.16	0.15
												Vel (f/s)	2.63	3.07	3.36	3.60	3.81	4.01
												R (hrs)	0.24	0.20	0.18	0.17	0.16	0.15
SUB-72	0.16	0.95	1387.8	315.0	Natural	0.056	0.34	0.33	6.60	0.15	23	**Tc (hrs)**	0.37	0.29	0.26	0.24	0.23	0.22
												Vel (f/s)	3.76	4.84	5.40	5.85	6.19	6.42
												R (hrs)	0.34	0.26	0.23	0.21	0.20	0.19
SUB-73	0.06	0.52	676.9	315.0	Natural	0.059	0.34	0.36	6.60	0.15	24	**Tc (hrs)**	0.25	0.21	0.20	0.18	0.17	0.16
												Vel (f/s)	3.05	3.58	3.89	4.26	4.46	4.68
												R (hrs)	0.24	0.20	0.19	0.17	0.16	0.15
SUB-74	0.16	0.93	1154.3	315.0	Natural	0.058	0.32	0.28	6.80	0.14	31	**Tc (hrs)**	0.35	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	3.90	4.82	5.29	5.73	6.06	6.29
												R (hrs)	0.31	0.25	0.22	0.20	0.19	0.18
SUB-75	0.02	0.34	970.6	315.0	Natural	0.066	0.35	0.40	6.00	0.18	13	**Tc (hrs)**	0.23	0.18	0.17	0.16	0.15	0.14
												Vel (f/s)	2.22	2.72	2.92	3.16	3.32	3.51
												R (hrs)	0.32	0.25	0.23	0.21	0.20	0.19
SUB-76	0.02	0.34	440.5	299.0	Natural	0.068	0.31	0.28	5.20	0.24	7	**Tc (hrs)**	0.23	0.19	0.18	0.16	0.15	0.15
												Vel (f/s)	2.18	2.60	2.85	3.06	3.24	3.42
												R (hrs)	0.28	0.23	0.21	0.19	0.18	0.17
SUB46A	0.03	0.48	269.7	251.0	Natural	0.065	0.34	0.31	7.00	0.12	1	**Tc (hrs)**	0.28	0.23	0.21	0.20	0.19	0.18
												Vel (f/s)	2.49	3.07	3.31	3.59	3.74	3.93
												R (hrs)	0.36	0.29	0.26	0.24	0.23	0.22
SUB46B	0.03	0.56	243.2	237.0	Natural	0.064	0.34	0.33	7.00	0.12	1	**Tc (hrs)**	0.33	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	2.47	3.23	3.53	3.78	4.03	4.19
												R (hrs)	0.50	0.37	0.34	0.31	0.29	0.28

* Non default value

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-18	0.39	1.47	310.2	266.0	Natural	0.051	0.35	0.33	7.30	0.11	30	**Tc (hrs)**	0.48	0.38	0.35	0.31	0.29	0.27
												Vel (f/s)	4.46	5.63	6.23	7.00	7.49	7.96
												R (hrs)	0.39	0.30	0.27	0.24	0.22	0.20

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-50	V.L.D.R.	0.019	8.6	Normal	20.0	5	0.30	0.050	Low	0.065
	DESERT	0.201	91.4	Dry	25.0		0.35	0.030	Low	0.051
SUB-51	V.L.D.R.	0.049	19.4	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.054	21.5	Normal	20.0	5	0.30	0.050	Low	0.059
	DESERT	0.149	59.1	Dry	25.0		0.35	0.030	Low	0.053
SUB-54	V.L.D.R.	0.087	92.6	Normal	20.0	5	0.30	0.050	Low	0.056
	DESERT	0.007	7.4	Normal *	25.0		0.35	0.030	Low	0.071
SUB-65	V.L.D.R.	0.127	68.7	Normal	20.0	5	0.30	0.050	Low	0.054
	L.D.R.	0.003	1.7	Dry *	50.0	15	0.30	0.050	Low	0.076
	COMM	0.006	3.3	Normal	75.0	80	0.10	0.020	Min	0.036
	DESERT	0.048	26.3	Dry	25.0		0.35	0.030	Low	0.059
SUB-66	DESERT	0.107	58.2	Normal *	25.0		0.35	0.030	Low	0.055
	V.L.D.R.	0.057	31.2	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.019	10.6	Normal	20.0	5	0.30	0.050	Low	0.065
SUB-68	V.L.D.R.	0.050	40.8	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.022	17.8	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.051	41.4	Normal *	25.0		0.35	0.030	Low	0.059

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01		9	0.053	0.045	0.053	4576	0.0131	924.00	**Sta**	0.0	10.3	19.3	25.9	32.9	53.6	89.4	104.0
									Elev	924.0	922.0	920.0	918.0	918.0	920.0	922.0	924.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-50	Aguila/Carefree	8	0.012	5.5	0.96		
		Aguila/Carefree	33	0.038	17.2	0.23		
		Aguila/Carefree	72	0.171	77.3	0.09	30.0	100
	SUB-51	Aguila/Carefree	3	0.068	26.9	0.58		
		Aguila/Carefree	8	0.007	2.6	0.96		
		Aguila/Carefree	33	0.130	51.7	0.23		
		Aguila/Carefree	72	0.030	11.9	0.09	30.0	100
		Aguila/Carefree	121	0.003	1.1	0.12		
		Aguila/Carefree	12	0.015	5.9	0.58 *		
	SUB-54	Aguila/Carefree	3	0.021	22.3	0.58		
		Aguila/Carefree	12	0.069	73.1	0.01		
		Aguila/Carefree	33	0.004	4.6	0.23		
	SUB-65	Aguila/Carefree	12	0.001	0.5	0.01		
		Aguila/Carefree	44	0.011	6.0	0.03		
		Aguila/Carefree	96	0.157	85.3	0.07		
		Aguila/Carefree	110	0.015	8.2	0.13		
	SUB-66	Aguila/Carefree	3	0.037	20.2	0.58		
		Aguila/Carefree	12	0.044	23.8	0.01		
		Aguila/Carefree	44	0.081	44.3	0.03		
		Aguila/Carefree	96	0.000		0.07		
		Aguila/Carefree	98	0.011	6.2	0.37		
		Aguila/Carefree	110	0.010	5.5	0.13		
	SUB-68	Aguila/Carefree	12	0.044	35.7	0.01		
		Aguila/Carefree	44	0.044	35.8	0.03		
		Aguila/Carefree	96	0.021	16.9	0.07		
		Aguila/Carefree	98	0.005	4.2	0.37		
		Aguila/Carefree	110	0.009	7.4	0.13		

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-50	0.22	0.90	290.8	260.0	Natural	0.052	0.35	0.35	6.60	0.14	24	**Tc (hrs)**	0.32	0.28	0.27	0.25	0.23	0.23
												Vel (f/s)	4.16	4.66	4.94	5.37	5.67	5.87
												R (hrs)	0.23	0.20	0.19	0.17	0.16	0.15
SUB-51	0.25	1.58	276.5	255.0	Natural	0.055	0.33	0.31	4.55	0.34	6	**Tc (hrs)**	0.63	0.49	0.44	0.39	0.36	0.34
												Vel (f/s)	3.71	4.71	5.29	5.91	6.38	6.86
												R (hrs)	0.69	0.53	0.47	0.41	0.38	0.35
SUB-54	0.09	0.78	118.1	118.1	Natural	0.057	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.42	0.36	0.34	0.31	0.29	0.28
												Vel (f/s)	2.74	3.15	3.38	3.65	3.92	4.10
												R (hrs)	0.44	0.38	0.35	0.32	0.30	0.28
SUB-65	0.18	1.13	105.3	105.3	Natural	0.055	0.31	0.19	8.00	0.08	6	**Tc (hrs)**	0.57	0.48	0.45	0.41	0.38	0.37
												Vel (f/s)	2.90	3.43	3.72	4.06	4.33	4.52
												R (hrs)	0.58	0.48	0.44	0.40	0.37	0.35
SUB-66	0.18	1.13	78.8	78.8	Natural	0.057	0.33	0.15	8.80	0.06	2	**Tc (hrs)**	0.67	0.55	0.50	0.46	0.44	0.42
												Vel (f/s)	2.47	3.01	3.29	3.58	3.78	3.97
												R (hrs)	0.69	0.55	0.50	0.46	0.43	0.41
SUB-68	0.12	1.03	100.8	100.8	Natural	0.060	0.32	0.13	10.10	0.03	3	**Tc (hrs)**	0.55	0.47	0.44	0.41	0.38	0.37
												Vel (f/s)	2.77	3.21	3.42	3.70	3.94	4.12
												R (hrs)	0.64	0.54	0.51	0.46	0.43	0.41

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-50	V.L.D.R.	0.019	8.6	Normal	20.0	5	0.30	0.050	Low	0.065
	DESERT	0.201	91.4	Dry	25.0		0.35	0.030	Low	0.051
SUB-51	V.L.D.R.	0.049	19.4	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.054	21.5	Normal	20.0	5	0.30	0.050	Low	0.059
	DESERT	0.149	59.1	Dry	25.0		0.35	0.030	Low	0.053
SUB-54	V.L.D.R.	0.087	92.6	Normal	20.0	5	0.30	0.050	Low	0.056
	DESERT	0.007	7.4	Normal *	25.0		0.35	0.030	Low	0.071
SUB-65	V.L.D.R.	0.127	68.7	Normal	20.0	5	0.30	0.050	Low	0.054
	L.D.R.	0.003	1.7	Dry *	50.0	15	0.30	0.050	Low	0.076
	COMM	0.006	3.3	Normal	75.0	80	0.10	0.020	Min	0.036
	DESERT	0.048	26.3	Dry	25.0		0.35	0.030	Low	0.059
SUB-66	DESERT	0.107	58.2	Normal *	25.0		0.35	0.030	Low	0.055
	V.L.D.R.	0.057	31.2	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.019	10.6	Normal	20.0	5	0.30	0.050	Low	0.065
SUB-68	V.L.D.R.	0.050	40.8	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.022	17.8	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.051	41.4	Normal *	25.0		0.35	0.030	Low	0.059

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01		9	0.053	0.045	0.053	4576	0.0131	1924.00	**Sta**	0.0	10.3	19.3	25.9	32.9	53.6	89.4	104.0
									Elev	924.0	922.0	920.0	918.0	918.0	920.0	922.0	924.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-50	Aguila/Carefree	8	0.012	5.5	0.96		
		Aguila/Carefree	33	0.038	17.2	0.23		
		Aguila/Carefree	72	0.171	77.3	0.09	30.0	100
	SUB-51	Aguila/Carefree	3	0.068	26.9	0.58		
		Aguila/Carefree	8	0.007	2.6	0.96		
		Aguila/Carefree	33	0.130	51.7	0.23		
		Aguila/Carefree	72	0.030	11.9	0.09	30.0	100
		Aguila/Carefree	121	0.003	1.1	0.12		
		Aguila/Carefree	12	0.015	5.9	0.58 *		
	SUB-54	Aguila/Carefree	3	0.021	22.3	0.58		
		Aguila/Carefree	12	0.069	73.1	0.01		
		Aguila/Carefree	33	0.004	4.6	0.23		
	SUB-65	Aguila/Carefree	12	0.001	0.5	0.01		
		Aguila/Carefree	44	0.011	6.0	0.03		
		Aguila/Carefree	96	0.157	85.3	0.07		
		Aguila/Carefree	110	0.015	8.2	0.13		
	SUB-66	Aguila/Carefree	3	0.037	20.2	0.58		
		Aguila/Carefree	12	0.044	23.8	0.01		
		Aguila/Carefree	44	0.081	44.3	0.03		
		Aguila/Carefree	96	0.000		0.07		
		Aguila/Carefree	98	0.011	6.2	0.37		
		Aguila/Carefree	110	0.010	5.5	0.13		
	SUB-68	Aguila/Carefree	12	0.044	35.7	0.01		
		Aguila/Carefree	44	0.044	35.8	0.03		
		Aguila/Carefree	96	0.021	16.9	0.07		
		Aguila/Carefree	98	0.005	4.2	0.37		
		Aguila/Carefree	110	0.009	7.4	0.13		

* Custom Value (not default value)

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-50	0.22	0.90	290.8	260.0	Natural	0.052	0.35	0.35	6.60	0.14	24	**Tc (hrs)**	0.32	0.28	0.27	0.25	0.23	0.23
												Vel (f/s)	4.16	4.66	4.94	5.37	5.67	5.87
												R (hrs)	0.23	0.20	0.19	0.17	0.16	0.15
SUB-51	0.25	1.58	276.5	255.0	Natural	0.055	0.33	0.31	4.55	0.34	6	**Tc (hrs)**	0.63	0.49	0.44	0.39	0.36	0.34
												Vel (f/s)	3.71	4.71	5.29	5.91	6.38	6.86
												R (hrs)	0.69	0.53	0.47	0.41	0.38	0.35
SUB-54	0.09	0.78	118.1	118.1	Natural	0.057	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.42	0.36	0.34	0.31	0.29	0.28
												Vel (f/s)	2.74	3.15	3.38	3.65	3.92	4.10
												R (hrs)	0.44	0.38	0.35	0.32	0.30	0.28
SUB-65	0.18	1.13	105.3	105.3	Natural	0.055	0.31	0.19	8.00	0.08	6	**Tc (hrs)**	0.57	0.48	0.45	0.41	0.38	0.37
												Vel (f/s)	2.90	3.43	3.72	4.06	4.33	4.52
												R (hrs)	0.58	0.48	0.44	0.40	0.37	0.35
SUB-66	0.18	1.13	78.8	78.8	Natural	0.057	0.33	0.15	8.80	0.06	2	**Tc (hrs)**	0.67	0.55	0.50	0.46	0.44	0.42
												Vel (f/s)	2.47	3.01	3.29	3.58	3.78	3.97
												R (hrs)	0.69	0.55	0.50	0.46	0.43	0.41
SUB-68	0.12	1.03	100.8	100.8	Natural	0.060	0.32	0.13	10.10	0.03	3	**Tc (hrs)**	0.55	0.47	0.44	0.41	0.38	0.37
												Vel (f/s)	2.77	3.21	3.42	3.70	3.94	4.12
												R (hrs)	0.64	0.54	0.51	0.46	0.43	0.41

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-23	V.L.D.R.	0.405	77.4	Normal	20.0	5	0.30	0.050	Low	0.047
	DESERT	0.118	22.6	Dry	25.0		0.35	0.030	Low	0.054
SUB-24	V.L.D.R.	0.023	8.7	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.121	45.3	Dry	25.0		0.35	0.030	Low	0.054
	DESERT	0.123	46.0	Normal *	25.0		0.35	0.030	Low	0.054
SUB-25	DESERT	0.799	85.3	Dry	25.0		0.35	0.030	Low	0.043
	DESERT	0.080	8.5	Dry	25.0		0.35	0.030	Low	0.057
	V.L.D.R.	0.059	6.2	Dry *	20.0	5	0.30	0.050	Low	0.058

* Custom Value (not default value)

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-23	Aguila/Carefree	8	0.012	2.3	0.96		
		Aguila/Carefree	33	0.019	3.7	0.23		
		Aguila/Carefree	72	0.492	94.1	0.09	30.0	100
	SUB-24	Aguila/Carefree	8	0.012	4.3	0.96		
		Aguila/Carefree	33	0.007	2.4	0.23		
		Aguila/Carefree	72	0.248	92.9	0.09	30.0	100
		Aguila/Carefree	121	0.001	0.3	0.12		
	SUB-25	Aguila/Carefree	3	0.028	3.0	0.58		
		Aguila/Carefree	33	0.006	0.7	0.23		
		Aguila/Carefree	72	0.856	91.3	0.09	30.0	100
		Aguila/Carefree	93	0.011	1.2	0.33		
		Aguila/Carefree	96	0.008	0.8	0.07		
		Aguila/Carefree	121	0.027	2.9	0.12		

* Custom Value (not default value)

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-23	0.52	1.48	229.1	225.0	Natural	0.049	0.31	0.20	7.00	0.11	32	**Tc (hrs)**	0.41	0.37	0.34	0.32	0.31	0.29
												Vel (f/s)	5.32	5.91	6.35	6.76	7.05	7.43
												R (hrs)	0.27	0.24	0.22	0.21	0.20	0.19
SUB-24	0.27	1.29	463.8	299.0	Natural	0.055	0.35	0.24	7.00	0.12	28	**Tc (hrs)**	0.37	0.33	0.31	0.29	0.28	0.26
												Vel (f/s)	5.10	5.75	6.04	6.48	6.88	7.19
												R (hrs)	0.32	0.28	0.27	0.25	0.23	0.22
SUB-25	0.94	2.23	225.9	223.0	Natural	0.045	0.35	0.35	7.00	0.12	28	**Tc (hrs)**	0.54	0.47	0.43	0.40	0.38	0.36
												Vel (f/s)	6.03	7.00	7.55	8.18	8.63	9.01
												R (hrs)	0.37	0.31	0.29	0.26	0.25	0.24

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-23	V.L.D.R.	0.405	77.4	Normal	20.0	5	0.30	0.050	Low	0.047
	DESERT	0.118	22.6	Dry	25.0		0.35	0.030	Low	0.054
SUB-24	V.L.D.R.	0.023	8.7	Normal	20.0	5	0.30	0.050	Low	0.064
	DESERT	0.121	45.3	Dry	25.0		0.35	0.030	Low	0.054
	DESERT	0.123	46.0	Normal *	25.0		0.35	0.030	Low	0.054
SUB-25	DESERT	0.799	85.3	Dry	25.0		0.35	0.030	Low	0.043
	DESERT	0.080	8.5	Dry	25.0		0.35	0.030	Low	0.057
	V.L.D.R.	0.059	6.2	Dry *	20.0	5	0.30	0.050	Low	0.058

* Custom Value (not default value)

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin 01								
	SUB-23	Aguila/Carefree	8	0.012	2.3	0.96		
		Aguila/Carefree	33	0.019	3.7	0.23		
		Aguila/Carefree	72	0.492	94.1	0.09	30.0	100
	SUB-24	Aguila/Carefree	8	0.012	4.3	0.96		
		Aguila/Carefree	33	0.007	2.4	0.23		
		Aguila/Carefree	72	0.248	92.9	0.09	30.0	100
		Aguila/Carefree	121	0.001	0.3	0.12		
	SUB-25	Aguila/Carefree	3	0.028	3.0	0.58		
		Aguila/Carefree	33	0.006	0.7	0.23		
		Aguila/Carefree	72	0.856	91.3	0.09	30.0	100
		Aguila/Carefree	93	0.011	1.2	0.33		
		Aguila/Carefree	96	0.008	0.8	0.07		
		Aguila/Carefree	121	0.027	2.9	0.12		

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-23	0.52	1.48	229.1	225.0	Natural	0.049	0.31	0.20	7.00	0.11	32	**Tc (hrs)**	0.41	0.37	0.34	0.32	0.31	0.29
												Vel (f/s)	5.32	5.91	6.35	6.76	7.05	7.43
												R (hrs)	0.27	0.24	0.22	0.21	0.20	0.19
SUB-24	0.27	1.29	463.8	299.0	Natural	0.055	0.35	0.24	7.00	0.12	28	**Tc (hrs)**	0.37	0.33	0.31	0.29	0.28	0.26
												Vel (f/s)	5.10	5.75	6.04	6.48	6.88	7.19
												R (hrs)	0.32	0.28	0.27	0.25	0.23	0.22
SUB-25	0.94	2.23	225.9	223.0	Natural	0.045	0.35	0.35	7.00	0.12	28	**Tc (hrs)**	0.54	0.47	0.43	0.40	0.38	0.36
												Vel (f/s)	6.03	7.00	7.55	8.18	8.63	9.01
												R (hrs)	0.37	0.31	0.29	0.26	0.25	0.24

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB12A	V.L.D.R.	0.089	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB-13	V.L.D.R.	0.541	100.0	Normal	20.0	5	0.30	0.050	Low	0.045
SUB14A	V.L.D.R.	0.180	100.0	Normal	20.0	5	0.30	0.050	Low	0.052
SUB14B	V.L.D.R.	0.267	100.0	Normal	20.0	5	0.30	0.050	Low	0.049
SUB14C	V.L.D.R.	0.459	100.0	Normal	20.0	5	0.30	0.050	Low	0.046
SUB-18	DESERT	0.083	21.5	Dry	25.0		0.35	0.030	Low	0.056
	V.L.D.R.	0.303	78.5	Normal	20.0	5	0.30	0.050	Low	0.049
SUB19A	V.L.D.R.	0.111	100.0	Normal	20.0	5	0.30	0.050	Low	0.055
SUB19B	V.L.D.R.	0.143	55.6	Normal	20.0	5	0.30	0.050	Low	0.053
	DESERT	0.114	44.4	Dry	25.0		0.35	0.030	Low	0.054
SUB19C	V.L.D.R.	0.097	92.8	Normal	20.0	5	0.30	0.050	Low	0.055
	DESERT	0.008	7.2	Dry	25.0		0.35	0.030	Low	0.071
SUB33A	V.L.D.R.	0.055	100.0	Normal	20.0	5	0.30	0.050	Low	0.059
SUB33B	V.L.D.R.	0.155	100.0	Normal	20.0	5	0.30	0.050	Low	0.053
SUB33C	V.L.D.R.	0.028	100.0	Normal	20.0	5	0.30	0.050	Low	0.063
SUB33D	V.L.D.R.	0.036	100.0	Normal	20.0	5	0.30	0.050	Low	0.061
SUB33E	V.L.D.R.	0.194	100.0	Normal	20.0	5	0.30	0.050	Low	0.051
SUB33F	V.L.D.R.	0.021	100.0	Normal	20.0	5	0.30	0.050	Low	0.064
SUB-45	V.L.D.R.	0.088	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB46A	V.L.D.R.	0.032	100.0	Normal	20.0	5	0.30	0.050	Low	0.062
SUB46B	V.L.D.R.	0.031	100.0	Normal	20.0	5	0.30	0.050	Low	0.062
SUB-47	V.L.D.R.	0.178	100.0	Normal	20.0	5	0.30	0.050	Low	0.052
SUB-57	V.L.D.R.	0.066	100.0	Normal	20.0	5	0.30	0.050	Low	0.058

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-58	V.L.D.R.	0.111	100.0	Normal	20.0	5	0.30	0.050	Low	0.055
SUB-59	V.L.D.R.	0.037	44.8	Normal	20.0	5	0.30	0.050	Low	0.061
	L.D.R.	0.046	55.2	Normal	50.0	15	0.30	0.050	Low	0.060
SUB-60	L.D.R.	0.052	56.4	Normal	50.0	15	0.30	0.050	Low	0.059
	V.L.D.R.	0.040	43.6	Normal	20.0	5	0.30	0.050	Low	0.061
SUB-61	V.L.D.R.	0.050	35.1	Normal	20.0	5	0.30	0.050	Low	0.059
	L.D.R.	0.092	64.8	Normal	50.0	15	0.30	0.050	Low	0.056
	COMM	0.000	0.1	Normal	75.0	80	0.10	0.020	Min	0.047
SUB-62	L.D.R.	0.015	15.1	Normal	50.0	15	0.30	0.050	Low	0.067
	V.L.D.R.	0.065	66.3	Normal	20.0	5	0.30	0.050	Low	0.058
	COMM	0.018	18.6	Normal	75.0	80	0.10	0.020	Min	0.033
SUB-63	V.L.D.R.	0.069	84.8	Normal	20.0	5	0.30	0.050	Low	0.057
	COMM	0.012	15.2	Normal	75.0	80	0.10	0.020	Min	0.034
SUB-64	V.L.D.R.	0.071	100.0	Normal	20.0	5	0.30	0.050	Low	0.057
SUB-69	V.L.D.R.	0.262	55.7	Normal	20.0	5	0.30	0.050	Low	0.049
	L.D.R.	0.209	44.3	Normal	50.0	15	0.30	0.050	Low	0.051
SUB-70	V.L.D.R.	0.062	85.7	Normal	20.0	5	0.30	0.050	Low	0.058
	L.D.R.	0.010	14.3	Normal	50.0	15	0.30	0.050	Low	0.069
SUB-71	M.F.R.	0.008	24.3	Normal	50.0	45	0.25	0.050	Low	0.070
	L.D.R.	0.025	73.6	Normal	50.0	15	0.30	0.050	Low	0.063
	COMM	0.001	2.0	Normal	75.0	80	0.10	0.020	Min	0.042
SUB-72	V.L.D.R.	0.117	75.5	Normal	20.0	5	0.30	0.050	Low	0.054
	L.D.R.	0.031	20.1	Normal	50.0	15	0.30	0.050	Low	0.062
	COMM	0.007	4.3	Normal	75.0	80	0.10	0.020	Min	0.036
SUB-73	M.F.R.	0.015	27.5	Normal	50.0	45	0.25	0.050	Low	0.066
	COMM	0.002	3.8	Normal	75.0	80	0.10	0.020	Min	0.039

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
	L.D.R.	0.036	65.4	Normal	50.0	15	0.30	0.050	Low	0.061
	V.L.D.R.	0.002	3.4	Normal	20.0	5	0.30	0.050	Low	0.079
SUB-74	L.D.R.	0.065	41.3	Normal	50.0	15	0.30	0.050	Low	0.058
	V.L.D.R.	0.083	52.8	Normal	20.0	5	0.30	0.050	Low	0.056
	COMM	0.009	5.9	Normal	75.0	80	0.10	0.020	Min	0.035
SUB-75	L.D.R.	0.008	46.6	Normal	50.0	15	0.30	0.050	Low	0.071
	M.F.R.	0.004	25.8	Normal	50.0	45	0.25	0.050	Low	0.074
	COMM	0.005	27.6	Normal	75.0	80	0.10	0.020	Min	0.037
SUB-76	COMM	0.004	18.3	Normal	75.0	80	0.10	0.020	Min	0.038
	L.D.R.	0.017	81.7	Normal	50.0	15	0.30	0.050	Low	0.066

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R14C	4	0.053	0.045	0.053	3270	0.0130	246.00	**Sta**	0.0	4.8	9.6	14.5	39.4	78.3	94.4	110.1
									Elev	246.0	244.0	242.0	240.0	240.0	242.0	244.0	246.0
01		1	0.053	0.045	0.053	477	0.0168	192.00	**Sta**	0.0	15.0	30.0	40.5	41.5	52.5	73.7	108.0
									Elev	192.0	191.0	190.0	188.0	188.0	190.0	190.2	192.0
01	R19C	5	0.053	0.045	0.053	4116	0.0114	204.00	**Sta**	0.0	47.6	66.1	87.7	106.8	112.7	131.1	138.9
									Elev	204.0	202.0	200.0	198.0	198.0	200.0	202.0	204.0
01		1	0.053	0.045	0.053	564	0.0390	262.00	**Sta**	0.0	8.2	16.6	27.9	50.0	57.9	65.9	73.0
									Elev	262.0	260.0	258.0	256.0	256.0	258.0	260.0	262.0
01	R18	1	0.053	0.045	0.053	2572	0.0233	146.00	**Sta**	0.0	2.6	5.9	9.9	20.8	24.7	27.3	30.4
									Elev	146.0	144.0	142.0	140.0	140.0	142.0	144.0	146.0
01		1	0.053	0.045	0.053	403	0.0546	92.00	**Sta**	0.0	10.7	21.5	44.3	64.8	88.0	122.0	149.0
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R33D	4	0.053	0.045	0.053	1637	0.0104	188.00	**Sta**	0.0	49.3	60.6	71.9	83.0	133.7	175.9	214.2
									Elev	188.0	186.0	184.0	182.0	182.0	184.0	186.0	188.0
01		1	0.053	0.045	0.053	455	0.0132	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R33C	2	0.053	0.045	0.053	1320	0.0159	158.00	**Sta**	0.0	6.5	14.3	25.5	44.2	52.6	58.3	64.3
									Elev	158.0	156.0	154.0	152.0	152.0	154.0	156.0	158.0
01	R45	10	0.053	0.045	0.053	4898	0.0218	192.00	**Sta**	0.0	26.3	64.2	107.1	146.4	157.7	166.9	176.3
									Elev	192.0	190.0	188.0	186.0	186.0	188.0	190.0	192.0
01	R76	3	0.053	0.045	0.053	919	0.0152	114.00	**Sta**	0.0	44.9	63.2	67.9	71.3	107.2	136.4	159.2
									Elev	114.0	112.0	110.0	108.0	108.0	110.0	112.0	114.0
01	R74	2	0.053	0.045	0.053	1412	0.0212	92.00	**Sta**	0.0	25.4	69.1	79.9	84.8	92.1	99.9	130.3
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R72	4	0.053	0.045	0.053	3492	0.0218	6.00	**Sta**	0.0	21.3	57.8	75.7	77.8	85.0	92.5	99.9
									Elev	5.0	4.0	2.0	0.0	0.0	2.0	4.0	6.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R69	3	0.053	0.045	0.053	2610	0.0146	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R60	1	0.053	0.045	0.053	420	0.0143	960.00	**Sta**	0.0	42.8	63.6	82.6	106.8	117.5	120.1	182.8
									Elev	964.0	962.0	960.0	958.0	958.0	960.0	960.0	960.0
01	R61	1	0.053	0.045	0.053	780	0.0103	950.00	**Sta**	0.0	7.4	14.6	36.2	47.1	62.9	69.6	76.4
									Elev	950.0	948.0	946.0	946.0	946.0	946.0	948.0	950.0
01	R63	2	0.053	0.045	0.053	2145	0.0196	922.00	**Sta**	0.0	4.2	8.2	12.2	36.3	41.2	45.8	50.4
									Elev	922.0	920.0	918.0	916.0	916.0	918.0	920.0	922.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin 01								
	SUB12A	Aguila/Carefree	8	0.000	0.1	0.96		
		Aguila/Carefree	26	0.001	1.1	0.01		
		Aguila/Carefree	66	0.029	31.9	0.23		
		Aguila/Carefree	72	0.060	66.9	0.09	30.0	100
	SUB-13	Aguila/Carefree	33	0.076	14.0	0.23		
		Aguila/Carefree	34	0.119	22.0	0.23		
		Aguila/Carefree	66	0.245	45.2	0.23		
		Aguila/Carefree	72	0.076	14.0	0.09	30.0	100
		Aguila/Carefree	93	0.026	4.8	0.33		
	SUB14A	Aguila/Carefree	26	0.061	33.6	0.01		
		Aguila/Carefree	33	0.011	5.9	0.23		
		Aguila/Carefree	34	0.004	2.3	0.23		
		Aguila/Carefree	66	0.071	39.3	0.23		
		Aguila/Carefree	72	0.021	11.5	0.09	30.0	100
		Aguila/Carefree	93	0.012	6.6	0.33		
		Aguila/Carefree	95	0.001	0.7	0.04		
	SUB14	Aguila/Carefree	26	0.038	14.3	0.01		
		Aguila/Carefree	66	0.163	61.2	0.23		
		Aguila/Carefree	72	0.001	0.2	0.09	30.0	100
		Aguila/Carefree	95	0.065	24.4	0.04		
	SUB14	Aguila/Carefree	26	0.076	16.7	0.01		
		Aguila/Carefree	34	0.000		0.23		
		Aguila/Carefree	66	0.228	49.6	0.23		
		Aguila/Carefree	72	0.016	3.4	0.09	30.0	100
		Aguila/Carefree	95	0.139	30.3	0.04		
	SUB-18	Aguila/Carefree	66	0.002	0.5	0.23		
		Aguila/Carefree	72	0.383	99.5	0.09	30.0	100
	SUB19A	Aguila/Carefree	26	0.016	14.5	0.01		
		Aguila/Carefree	66	0.024	21.9	0.23		
		Aguila/Carefree	72	0.070	63.7	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.013	5.0	0.23		
		Aguila/Carefree	72	0.244	95.0	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.000	0.1	0.23		
		Aguila/Carefree	72	0.105	99.9	0.09	30.0	100
	SUB33A	Aguila/Carefree	26	0.012	22.5	0.01		
		Aguila/Carefree	34	0.013	24.3	0.23		
		Aguila/Carefree	66	0.024	42.8	0.23		
		Aguila/Carefree	72	0.006	10.5	0.09	30.0	100
	SUB33	Aguila/Carefree	26	0.047	30.4	0.01		
		Aguila/Carefree	31	0.001	0.9	0.33	35.0	100
		Aguila/Carefree	34	0.023	15.0	0.23		
		Aguila/Carefree	66	0.083	53.7	0.23		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB33	Aguila/Carefree	26	0.019	66.1	0.01		
	Aguila/Carefree	34	0.001	1.8	0.23		
	Aguila/Carefree	66	0.009	32.1	0.23		
SUB33	Aguila/Carefree	26	0.004	11.3	0.01		
	Aguila/Carefree	31	0.002	6.8	0.33	35.0	100
	Aguila/Carefree	66	0.029	82.0	0.23		
SUB33E	Aguila/Carefree	26	0.032	16.3	0.01		
	Aguila/Carefree	31	0.079	40.8	0.33	35.0	100
	Aguila/Carefree	66	0.012	6.1	0.23		
	Aguila/Carefree	72	0.072	36.9	0.09	30.0	100
SUB33F	Aguila/Carefree	26	0.005	23.8	0.01		
	Aguila/Carefree	66	0.016	76.2	0.23		
SUB-45	Aguila/Carefree	26	0.049	55.7	0.01		
	Aguila/Carefree	34	0.039	44.3	0.23		
SUB46A	Aguila/Carefree	26	0.009	26.7	0.01		
	Aguila/Carefree	34	0.024	73.3	0.23		
SUB46	Aguila/Carefree	26	0.008	25.4	0.01		
	Aguila/Carefree	34	0.023	74.6	0.23		
SUB-47	Aguila/Carefree	26	0.016	8.7	0.01		
	Aguila/Carefree	34	0.120	67.6	0.23		
	Aguila/Carefree	93	0.042	23.7	0.33		
SUB-57	Aguila/Carefree	6	0.001	1.7	0.62		
	Aguila/Carefree	33	0.037	55.4	0.23		
	Aguila/Carefree	72	0.029	43.0	0.09	30.0	100
SUB-58	Aguila/Carefree	6	0.011	10.2	0.62		
	Aguila/Carefree	12	0.008	7.6	0.01		
	Aguila/Carefree	33	0.087	79.0	0.23		
	Aguila/Carefree	72	0.004	3.3	0.09	30.0	100
SUB-59	Aguila/Carefree	6	0.045	55.0	0.62		
	Aguila/Carefree	12	0.002	2.5	0.01		
	Aguila/Carefree	33	0.002	1.9	0.23		
	Aguila/Carefree	96	0.033	40.5	0.07		
SUB-60	Aguila/Carefree	6	0.015	16.6	0.62		
	Aguila/Carefree	96	0.077	83.4	0.07		
SUB-61	Aguila/Carefree	6	0.005	3.7	0.62		
	Aguila/Carefree	12	0.000	0.3	0.01		
	Aguila/Carefree	33	0.000	0.1	0.23		
	Aguila/Carefree	96	0.136	95.9	0.07		
SUB-62	Aguila/Carefree	3	0.003	3.2	0.58		
	Aguila/Carefree	6	0.005	5.4	0.62		
	Aguila/Carefree	12	0.001	0.8	0.01		
	Aguila/Carefree	96	0.089	90.6	0.07		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB-63	Aguila/Carefree	3	0.001	0.9	0.58		
	Aguila/Carefree	96	0.081	98.8	0.07		
	Aguila/Carefree	110	0.000	0.4	0.13		
SUB-64	Aguila/Carefree	3	0.033	46.2	0.58		
	Aguila/Carefree	12	0.023	32.3	0.01		
	Aguila/Carefree	44	0.009	12.4	0.03		
	Aguila/Carefree	96	0.001	1.4	0.07		
	Aguila/Carefree	110	0.005	7.6	0.13		
SUB-69	Aguila/Carefree	6	0.033	6.9	0.62		
	Aguila/Carefree	33	0.196	41.5	0.23		
	Aguila/Carefree	72	0.243	51.6	0.09	30.0	100
SUB-70	Aguila/Carefree	33	0.019	26.5	0.23		
	Aguila/Carefree	72	0.053	73.5	0.09	30.0	100
SUB-71	Aguila/Carefree	33	0.012	33.6	0.23		
	Aguila/Carefree	72	0.023	66.4	0.09	30.0	100
SUB-72	Aguila/Carefree	33	0.052	33.3	0.23		
	Aguila/Carefree	72	0.103	66.7	0.09	30.0	100
SUB-73	Aguila/Carefree	33	0.016	28.5	0.23		
	Aguila/Carefree	72	0.040	71.5	0.09	30.0	100
SUB-74	Aguila/Carefree	33	0.037	23.4	0.23		
	Aguila/Carefree	72	0.120	76.6	0.09	30.0	100
SUB-75	Aguila/Carefree	33	0.009	55.5	0.23		
	Aguila/Carefree	72	0.007	44.5	0.09	30.0	100
SUB-76	Aguila/Carefree	33	0.018	88.7	0.23		
	Aguila/Carefree	72	0.002	11.3	0.09	30.0	100

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-13	0.54	1.26	262.9	247.0	Natural	0.045	0.30	0.25	5.20	0.23	9	**Tc (hrs)**	0.46	0.35	0.31	0.28	0.25	0.24
												Vel (f/s)	3.99	5.28	6.00	6.72	7.28	7.64
												R (hrs)	0.27	0.20	0.17	0.15	0.14	0.13
SUB14A	0.18	0.97	227.4	224.0	Natural	0.052	0.30	0.15	8.00	0.08	8	**Tc (hrs)**	0.36	0.30	0.28	0.25	0.24	0.23
												Vel (f/s)	3.92	4.68	5.17	5.60	5.98	6.21
												R (hrs)	0.31	0.26	0.23	0.21	0.20	0.19
SUB14B	0.27	1.51	192.7	192.7	Natural	0.049	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.55	0.43	0.39	0.35	0.33	0.30
												Vel (f/s)	4.06	5.16	5.71	6.40	6.81	7.29
												R (hrs)	0.56	0.43	0.38	0.34	0.31	0.29
SUB14C	0.46	1.74	353.6	279.0	Natural	0.046	0.30	0.15	7.60	0.09	6	**Tc (hrs)**	0.48	0.38	0.35	0.31	0.29	0.28
												Vel (f/s)	5.37	6.73	7.38	8.15	8.74	9.28
												R (hrs)	0.39	0.31	0.28	0.25	0.23	0.22
SUB19A	0.11	0.86	367.6	282.0	Natural	0.055	0.30	0.15	7.60	0.09	24	**Tc (hrs)**	0.31	0.26	0.24	0.23	0.22	0.21
												Vel (f/s)	4.10	4.80	5.21	5.61	5.81	6.06
												R (hrs)	0.31	0.26	0.24	0.22	0.21	0.20
SUB19B	0.26	1.36	617.9	315.0	Natural	0.053	0.32	0.24	7.00	0.11	31	**Tc (hrs)**	0.42	0.34	0.31	0.28	0.26	0.25
												Vel (f/s)	4.78	5.90	6.48	7.15	7.73	8.11
												R (hrs)	0.39	0.31	0.28	0.25	0.23	0.22
SUB19C	0.11	0.84	450.7	299.0	Natural	0.056	0.30	0.16	7.30	0.10	35	**Tc (hrs)**	0.30	0.25	0.24	0.22	0.21	0.20
												Vel (f/s)	4.16	4.85	5.18	5.57	5.78	6.16
												R (hrs)	0.30	0.25	0.24	0.22	0.21	0.20
SUB33A	0.06	0.37	377.4	284.0	Natural	0.059	0.30	0.15	7.00	0.11	8	**Tc (hrs)**	0.20	0.18	0.17	0.15	0.15	0.14
												Vel (f/s)	2.71	3.03	3.25	3.52	3.72	3.82
												R (hrs)	0.15	0.13	0.12	0.11	0.10	0.10
SUB33B	0.16	0.93	380.4	285.0	Natural	0.053	0.30	0.15	7.30	0.10	5	**Tc (hrs)**	0.33	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	4.15	5.03	5.46	5.85	6.17	6.40

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.29	0.24	0.22	0.20	0.19	0.18
SUB33C	0.03	0.40	126.2	126.2	Natural	0.063	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.28	0.24	0.23	0.21	0.20	0.19
												Vel (f/s)	2.13	2.42	2.61	2.75	2.93	3.06
												R (hrs)	0.33	0.28	0.26	0.25	0.23	0.22
SUB33D	0.04	0.60	57.0	57.0	Natural	0.061	0.30	0.25	5.70	0.19	7	**Tc (hrs)**	0.65	0.50	0.43	0.38	0.35	0.33
												Vel (f/s)	1.35	1.77	2.05	2.35	2.54	2.71
												R (hrs)	1.04	0.76	0.65	0.56	0.51	0.48
SUB33E	0.19	0.91	273.5	253.0	Natural	0.051	0.30	0.17	6.80	0.12	30	**Tc (hrs)**	0.33	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	4.11	4.92	5.34	5.73	6.04	6.27
												R (hrs)	0.25	0.21	0.19	0.17	0.16	0.16
SUB33F	0.02	0.33	219.5	218.0	Natural	0.064	0.30	0.17	6.80	0.12	5	**Tc (hrs)**	0.22	0.19	0.18	0.17	0.16	0.15
												Vel (f/s)	2.23	2.52	2.70	2.90	3.06	3.23
												R (hrs)	0.25	0.22	0.20	0.19	0.18	0.17
SUB-45	0.09	1.08	208.0	207.0	Natural	0.056	0.30	0.15	9.70	0.04	5	**Tc (hrs)**	0.42	0.35	0.32	0.29	0.27	0.26
												Vel (f/s)	3.80	4.58	4.93	5.50	5.85	6.14
												R (hrs)	0.60	0.48	0.45	0.39	0.37	0.35
SUB-47	0.18	1.02	154.3	154.3	Natural	0.052	0.30	0.25	5.40	0.21	5	**Tc (hrs)**	0.55	0.41	0.36	0.32	0.29	0.28
												Vel (f/s)	2.72	3.62	4.18	4.72	5.12	5.44
												R (hrs)	0.52	0.38	0.32	0.28	0.26	0.24
SUB-57	0.07	0.46	921.7	315.0	Natural	0.058	0.30	0.25	5.80	0.18	18	**Tc (hrs)**	0.23	0.20	0.18	0.17	0.16	0.15
												Vel (f/s)	3.00	3.44	3.69	4.04	4.27	4.50
												R (hrs)	0.18	0.15	0.14	0.13	0.12	0.11
SUB-58	0.11	0.72	396.1	295.0	Natural	0.055	0.30	0.25	5.30	0.22	6	**Tc (hrs)**	0.32	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.29	4.29	4.61	4.96	5.28	5.50
												R (hrs)	0.28	0.21	0.19	0.18	0.17	0.16

* Non default value

Sub Basin Data

Basin: 01 Storms: Multiple Duration: 6 Hour Loss Method: Green-Ampt Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-59	0.08	1.11	101.5	101.5	Natural	0.060	0.30	0.25	5.00	0.29	11	**Tc (hrs)**	0.83	0.63	0.54	0.46	0.42	0.39
												Vel (f/s)	1.97	2.60	3.03	3.55	3.90	4.20
												R (hrs)	1.35	0.99	0.84	0.70	0.63	0.58
SUB-60	0.09	1.00	112.7	112.7	Natural	0.060	0.30	0.15	7.00	0.13	11	**Tc (hrs)**	0.61	0.48	0.43	0.38	0.35	0.33
												Vel (f/s)	2.41	3.09	3.45	3.87	4.14	4.40
												R (hrs)	0.83	0.63	0.56	0.49	0.46	0.43
SUB-61	0.14	1.40	119.4	119.4	Natural	0.057	0.30	0.15	7.60	0.10	12	**Tc (hrs)**	0.71	0.55	0.50	0.44	0.41	0.39
												Vel (f/s)	2.90	3.71	4.14	4.65	4.97	5.29
												R (hrs)	1.01	0.77	0.68	0.60	0.55	0.51
SUB-62	0.10	0.87	116.8	116.8	Natural	0.055	0.26	0.15	7.60	0.10	20	**Tc (hrs)**	0.47	0.38	0.35	0.32	0.30	0.28
												Vel (f/s)	2.73	3.33	3.65	4.03	4.31	4.57
												R (hrs)	0.53	0.43	0.39	0.35	0.32	0.30
SUB-63	0.08	0.87	121.4	121.4	Natural	0.054	0.27	0.15	8.00	0.08	16	**Tc (hrs)**	0.45	0.37	0.34	0.30	0.29	0.27
												Vel (f/s)	2.86	3.44	3.78	4.20	4.43	4.71
												R (hrs)	0.56	0.46	0.41	0.37	0.35	0.32
SUB-64	0.07	0.81	111.9	111.9	Natural	0.057	0.30	0.15	7.30	0.10	5	**Tc (hrs)**	0.49	0.39	0.35	0.32	0.30	0.28
												Vel (f/s)	2.43	3.06	3.39	3.75	4.01	4.26
												R (hrs)	0.64	0.49	0.44	0.39	0.37	0.34
SUB12A	0.09	0.77	528.1	306.0	Natural	0.056	0.30	0.19	6.60	0.13	25	**Tc (hrs)**	0.29	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.92	4.59	4.93	5.30	5.65	5.88
												R (hrs)	0.30	0.25	0.23	0.21	0.20	0.19
SUB-69	0.47	1.61	871.7	315.0	Natural	0.050	0.30	0.25	6.00	0.18	25	**Tc (hrs)**	0.48	0.38	0.34	0.30	0.28	0.27
												Vel (f/s)	4.93	6.23	6.90	7.77	8.34	8.84
												R (hrs)	0.37	0.28	0.25	0.22	0.21	0.19
SUB-70	0.07	0.85	1535.4	315.0	Natural	0.060	0.30	0.19	6.60	0.14	28	**Tc (hrs)**	0.33	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	3.84	4.67	5.07	5.44	5.75	5.99

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	0.42	0.34	0.31	0.28	0.27	0.26
SUB-71	0.04	0.41	854.4	315.0	Natural	0.064	0.28	0.19	6.60	0.17	43	**Tc (hrs)**	0.21	0.19	0.18	0.16	0.15	0.15
												Vel (f/s)	2.82	3.20	3.44	3.69	3.90	4.01
												R (hrs)	0.22	0.19	0.18	0.16	0.15	0.15
SUB-72	0.16	0.95	1387.8	315.0	Natural	0.055	0.29	0.19	6.60	0.14	30	**Tc (hrs)**	0.33	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	4.24	5.14	5.57	5.98	6.30	6.54
												R (hrs)	0.30	0.24	0.22	0.20	0.19	0.18
SUB-73	0.06	0.52	676.9	315.0	Natural	0.062	0.28	0.19	6.60	0.17	47	**Tc (hrs)**	0.23	0.21	0.20	0.18	0.17	0.17
												Vel (f/s)	3.27	3.67	3.89	4.17	4.46	4.57
												R (hrs)	0.23	0.20	0.19	0.17	0.16	0.16
SUB-74	0.16	0.93	1154.3	315.0	Natural	0.056	0.29	0.17	6.80	0.14	37	**Tc (hrs)**	0.32	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	4.25	5.11	5.46	5.96	6.17	6.56
												R (hrs)	0.29	0.23	0.22	0.20	0.19	0.18
SUB-75	0.02	0.34	970.6	315.0	Natural	0.062	0.23	0.25	6.00	0.22	54	**Tc (hrs)**	0.19	0.17	0.16	0.15	0.14	0.13
												Vel (f/s)	2.60	2.99	3.16	3.42	3.51	3.75
												R (hrs)	0.26	0.23	0.21	0.19	0.19	0.18
SUB-76	0.02	0.34	440.5	299.0	Natural	0.061	0.26	0.25	5.20	0.31	30	**Tc (hrs)**	0.21	0.18	0.16	0.15	0.14	0.14
												Vel (f/s)	2.40	2.85	3.06	3.32	3.51	3.61
												R (hrs)	0.25	0.21	0.19	0.18	0.17	0.16
SUB46A	0.03	0.48	269.7	251.0	Natural	0.062	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.25	0.22	0.20	0.19	0.18	0.17
												Vel (f/s)	2.86	3.24	3.45	3.74	3.93	4.12
												R (hrs)	0.31	0.27	0.25	0.23	0.22	0.21
SUB46B	0.03	0.56	243.2	237.0	Natural	0.062	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.28	0.24	0.23	0.21	0.20	0.19
												Vel (f/s)	2.94	3.45	3.65	3.95	4.19	4.37
												R (hrs)	0.41	0.34	0.32	0.30	0.28	0.26

* Non default value

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-18	0.39	1.47	310.2	266.0	Natural	0.051	0.31	0.19	7.30	0.10	34	**Tc (hrs)**	0.45	0.37	0.34	0.30	0.28	0.27
												Vel (f/s)	4.83	5.87	6.38	7.09	7.62	8.07
												R (hrs)	0.35	0.29	0.26	0.23	0.21	0.20

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB12A	V.L.D.R.	0.089	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB-13	V.L.D.R.	0.541	100.0	Normal	20.0	5	0.30	0.050	Low	0.045
SUB14A	V.L.D.R.	0.180	100.0	Normal	20.0	5	0.30	0.050	Low	0.052
SUB14B	V.L.D.R.	0.267	100.0	Normal	20.0	5	0.30	0.050	Low	0.049
SUB14C	V.L.D.R.	0.459	100.0	Normal	20.0	5	0.30	0.050	Low	0.046
SUB-18	DESERT	0.083	21.5	Dry	25.0		0.35	0.030	Low	0.056
	V.L.D.R.	0.303	78.5	Normal	20.0	5	0.30	0.050	Low	0.049
SUB19A	V.L.D.R.	0.111	100.0	Normal	20.0	5	0.30	0.050	Low	0.055
SUB19B	V.L.D.R.	0.143	55.6	Normal	20.0	5	0.30	0.050	Low	0.053
	DESERT	0.114	44.4	Dry	25.0		0.35	0.030	Low	0.054
SUB19C	V.L.D.R.	0.097	92.8	Normal	20.0	5	0.30	0.050	Low	0.055
	DESERT	0.008	7.2	Dry	25.0		0.35	0.030	Low	0.071
SUB33A	V.L.D.R.	0.055	100.0	Normal	20.0	5	0.30	0.050	Low	0.059
SUB33B	V.L.D.R.	0.155	100.0	Normal	20.0	5	0.30	0.050	Low	0.053
SUB33C	V.L.D.R.	0.028	100.0	Normal	20.0	5	0.30	0.050	Low	0.063
SUB33D	V.L.D.R.	0.036	100.0	Normal	20.0	5	0.30	0.050	Low	0.061
SUB33E	V.L.D.R.	0.194	100.0	Normal	20.0	5	0.30	0.050	Low	0.051
SUB33F	V.L.D.R.	0.021	100.0	Normal	20.0	5	0.30	0.050	Low	0.064
SUB-45	V.L.D.R.	0.088	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB46A	V.L.D.R.	0.032	100.0	Normal	20.0	5	0.30	0.050	Low	0.062
SUB46B	V.L.D.R.	0.031	100.0	Normal	20.0	5	0.30	0.050	Low	0.062
SUB-47	V.L.D.R.	0.178	100.0	Normal	20.0	5	0.30	0.050	Low	0.052
SUB-57	V.L.D.R.	0.066	100.0	Normal	20.0	5	0.30	0.050	Low	0.058

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-58	V.L.D.R.	0.111	100.0	Normal	20.0	5	0.30	0.050	Low	0.055
SUB-59	V.L.D.R.	0.037	44.8	Normal	20.0	5	0.30	0.050	Low	0.061
	L.D.R.	0.046	55.2	Normal	50.0	15	0.30	0.050	Low	0.060
SUB-60	L.D.R.	0.052	56.4	Normal	50.0	15	0.30	0.050	Low	0.059
	V.L.D.R.	0.040	43.6	Normal	20.0	5	0.30	0.050	Low	0.061
SUB-61	V.L.D.R.	0.050	35.1	Normal	20.0	5	0.30	0.050	Low	0.059
	L.D.R.	0.092	64.8	Normal	50.0	15	0.30	0.050	Low	0.056
	COMM	0.000	0.1	Normal	75.0	80	0.10	0.020	Min	0.047
SUB-62	L.D.R.	0.015	15.1	Normal	50.0	15	0.30	0.050	Low	0.067
	V.L.D.R.	0.065	66.3	Normal	20.0	5	0.30	0.050	Low	0.058
	COMM	0.018	18.6	Normal	75.0	80	0.10	0.020	Min	0.033
SUB-63	V.L.D.R.	0.069	84.8	Normal	20.0	5	0.30	0.050	Low	0.057
	COMM	0.012	15.2	Normal	75.0	80	0.10	0.020	Min	0.034
SUB-64	V.L.D.R.	0.071	100.0	Normal	20.0	5	0.30	0.050	Low	0.057
SUB-69	V.L.D.R.	0.262	55.7	Normal	20.0	5	0.30	0.050	Low	0.049
	L.D.R.	0.209	44.3	Normal	50.0	15	0.30	0.050	Low	0.051
SUB-70	V.L.D.R.	0.062	85.7	Normal	20.0	5	0.30	0.050	Low	0.058
	L.D.R.	0.010	14.3	Normal	50.0	15	0.30	0.050	Low	0.069
SUB-71	M.F.R.	0.008	24.3	Normal	50.0	45	0.25	0.050	Low	0.070
	L.D.R.	0.025	73.6	Normal	50.0	15	0.30	0.050	Low	0.063
	COMM	0.001	2.0	Normal	75.0	80	0.10	0.020	Min	0.042
SUB-72	V.L.D.R.	0.117	75.5	Normal	20.0	5	0.30	0.050	Low	0.054
	L.D.R.	0.031	20.1	Normal	50.0	15	0.30	0.050	Low	0.062
	COMM	0.007	4.3	Normal	75.0	80	0.10	0.020	Min	0.036
SUB-73	M.F.R.	0.015	27.5	Normal	50.0	45	0.25	0.050	Low	0.066
	COMM	0.002	3.8	Normal	75.0	80	0.10	0.020	Min	0.039

* Custom Value (not default value)

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
	L.D.R.	0.036	65.4	Normal	50.0	15	0.30	0.050	Low	0.061
	V.L.D.R.	0.002	3.4	Normal	20.0	5	0.30	0.050	Low	0.079
SUB-74	L.D.R.	0.065	41.3	Normal	50.0	15	0.30	0.050	Low	0.058
	V.L.D.R.	0.083	52.8	Normal	20.0	5	0.30	0.050	Low	0.056
	COMM	0.009	5.9	Normal	75.0	80	0.10	0.020	Min	0.035
SUB-75	L.D.R.	0.008	46.6	Normal	50.0	15	0.30	0.050	Low	0.071
	M.F.R.	0.004	25.8	Normal	50.0	45	0.25	0.050	Low	0.074
	COMM	0.005	27.6	Normal	75.0	80	0.10	0.020	Min	0.037
SUB-76	COMM	0.004	18.3	Normal	75.0	80	0.10	0.020	Min	0.038
	L.D.R.	0.017	81.7	Normal	50.0	15	0.30	0.050	Low	0.066

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R14C	4	0.053	0.045	0.053	3270	0.0130	246.00	**Sta**	0.0	4.8	9.6	14.5	39.4	78.3	94.4	110.1
									Elev	246.0	244.0	242.0	240.0	240.0	242.0	244.0	246.0
01		1	0.053	0.045	0.053	477	0.0168	192.00	**Sta**	0.0	15.0	30.0	40.5	41.5	52.5	73.7	108.0
									Elev	192.0	191.0	190.0	188.0	188.0	190.0	190.2	192.0
01	R19C	5	0.053	0.045	0.053	4116	0.0114	204.00	**Sta**	0.0	47.6	66.1	87.7	106.8	112.7	131.1	138.9
									Elev	204.0	202.0	200.0	198.0	198.0	200.0	202.0	204.0
01		1	0.053	0.045	0.053	564	0.0390	262.00	**Sta**	0.0	8.2	16.6	27.9	50.0	57.9	65.9	73.0
									Elev	262.0	260.0	258.0	256.0	256.0	258.0	260.0	262.0
01	R18	1	0.053	0.045	0.053	2572	0.0233	146.00	**Sta**	0.0	2.6	5.9	9.9	20.8	24.7	27.3	30.4
									Elev	146.0	144.0	142.0	140.0	140.0	142.0	144.0	146.0
01		1	0.053	0.045	0.053	403	0.0546	92.00	**Sta**	0.0	10.7	21.5	44.3	64.8	88.0	122.0	149.0
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R33D	4	0.053	0.045	0.053	1637	0.0104	188.00	**Sta**	0.0	49.3	60.6	71.9	83.0	133.7	175.9	214.2
									Elev	188.0	186.0	184.0	182.0	182.0	184.0	186.0	188.0
01		1	0.053	0.045	0.053	455	0.0132	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R33C	2	0.053	0.045	0.053	1320	0.0159	158.00	**Sta**	0.0	6.5	14.3	25.5	44.2	52.6	58.3	64.3
									Elev	158.0	156.0	154.0	152.0	152.0	154.0	156.0	158.0
01	R45	10	0.053	0.045	0.053	4898	0.0218	192.00	**Sta**	0.0	26.3	64.2	107.1	146.4	157.7	166.9	176.3
									Elev	192.0	190.0	188.0	186.0	186.0	188.0	190.0	192.0
01	R76	3	0.053	0.045	0.053	919	0.0152	114.00	**Sta**	0.0	44.9	63.2	67.9	71.3	107.2	136.4	159.2
									Elev	114.0	112.0	110.0	108.0	108.0	110.0	112.0	114.0
01	R74	2	0.053	0.045	0.053	1412	0.0212	92.00	**Sta**	0.0	25.4	69.1	79.9	84.8	92.1	99.9	130.3
									Elev	92.0	90.0	88.0	86.0	86.0	88.0	90.0	92.0
01	R72	4	0.053	0.045	0.053	3492	0.0218	6.00	**Sta**	0.0	21.3	57.8	75.7	77.8	85.0	92.5	99.9
									Elev	5.0	4.0	2.0	0.0	0.0	2.0	4.0	6.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01	R69	3	0.053	0.045	0.053	2610	0.0146	972.00	**Sta**	0.0	36.7	77.1	91.0	126.4	146.8	157.7	170.6
									Elev	972.0	970.0	968.0	966.0	966.0	968.0	970.0	972.0
01	R60	1	0.053	0.045	0.053	420	0.0143	960.00	**Sta**	0.0	42.8	63.6	82.6	106.8	117.5	120.1	182.8
									Elev	964.0	962.0	960.0	958.0	958.0	960.0	960.0	960.0
01	R61	1	0.053	0.045	0.053	780	0.0103	950.00	**Sta**	0.0	7.4	14.6	36.2	47.1	62.9	69.6	76.4
									Elev	950.0	948.0	946.0	946.0	946.0	946.0	948.0	950.0
01	R63	2	0.053	0.045	0.053	2145	0.0196	922.00	**Sta**	0.0	4.2	8.2	12.2	36.3	41.2	45.8	50.4
									Elev	922.0	920.0	918.0	916.0	916.0	918.0	920.0	922.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB12A	Aguila/Carefree	8	0.000	0.1	0.96		
		Aguila/Carefree	26	0.001	1.1	0.01		
		Aguila/Carefree	66	0.029	31.9	0.23		
		Aguila/Carefree	72	0.060	66.9	0.09	30.0	100
	SUB-13	Aguila/Carefree	33	0.076	14.0	0.23		
		Aguila/Carefree	34	0.119	22.0	0.23		
		Aguila/Carefree	66	0.245	45.2	0.23		
		Aguila/Carefree	72	0.076	14.0	0.09	30.0	100
		Aguila/Carefree	93	0.026	4.8	0.33		
	SUB14A	Aguila/Carefree	26	0.061	33.6	0.01		
		Aguila/Carefree	33	0.011	5.9	0.23		
		Aguila/Carefree	34	0.004	2.3	0.23		
		Aguila/Carefree	66	0.071	39.3	0.23		
		Aguila/Carefree	72	0.021	11.5	0.09	30.0	100
		Aguila/Carefree	93	0.012	6.6	0.33		
		Aguila/Carefree	95	0.001	0.7	0.04		
	SUB14	Aguila/Carefree	26	0.038	14.3	0.01		
		Aguila/Carefree	66	0.163	61.2	0.23		
		Aguila/Carefree	72	0.001	0.2	0.09	30.0	100
		Aguila/Carefree	95	0.065	24.4	0.04		
	SUB14	Aguila/Carefree	26	0.076	16.7	0.01		
		Aguila/Carefree	34	0.000		0.23		
		Aguila/Carefree	66	0.228	49.6	0.23		
		Aguila/Carefree	72	0.016	3.4	0.09	30.0	100
		Aguila/Carefree	95	0.139	30.3	0.04		
	SUB-18	Aguila/Carefree	66	0.002	0.5	0.23		
		Aguila/Carefree	72	0.383	99.5	0.09	30.0	100
	SUB19A	Aguila/Carefree	26	0.016	14.5	0.01		
		Aguila/Carefree	66	0.024	21.9	0.23		
		Aguila/Carefree	72	0.070	63.7	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.013	5.0	0.23		
		Aguila/Carefree	72	0.244	95.0	0.09	30.0	100
	SUB19	Aguila/Carefree	66	0.000	0.1	0.23		
		Aguila/Carefree	72	0.105	99.9	0.09	30.0	100
	SUB33A	Aguila/Carefree	26	0.012	22.5	0.01		
		Aguila/Carefree	34	0.013	24.3	0.23		
		Aguila/Carefree	66	0.024	42.8	0.23		
		Aguila/Carefree	72	0.006	10.5	0.09	30.0	100
	SUB33	Aguila/Carefree	26	0.047	30.4	0.01		
		Aguila/Carefree	31	0.001	0.9	0.33	35.0	100
		Aguila/Carefree	34	0.023	15.0	0.23		
		Aguila/Carefree	66	0.083	53.7	0.23		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB33	Aguila/Carefree	26	0.019	66.1	0.01		
	Aguila/Carefree	34	0.001	1.8	0.23		
	Aguila/Carefree	66	0.009	32.1	0.23		
SUB33	Aguila/Carefree	26	0.004	11.3	0.01		
	Aguila/Carefree	31	0.002	6.8	0.33	35.0	100
	Aguila/Carefree	66	0.029	82.0	0.23		
SUB33E	Aguila/Carefree	26	0.032	16.3	0.01		
	Aguila/Carefree	31	0.079	40.8	0.33	35.0	100
	Aguila/Carefree	66	0.012	6.1	0.23		
	Aguila/Carefree	72	0.072	36.9	0.09	30.0	100
SUB33F	Aguila/Carefree	26	0.005	23.8	0.01		
	Aguila/Carefree	66	0.016	76.2	0.23		
SUB-45	Aguila/Carefree	26	0.049	55.7	0.01		
	Aguila/Carefree	34	0.039	44.3	0.23		
SUB46A	Aguila/Carefree	26	0.009	26.7	0.01		
	Aguila/Carefree	34	0.024	73.3	0.23		
SUB46	Aguila/Carefree	26	0.008	25.4	0.01		
	Aguila/Carefree	34	0.023	74.6	0.23		
SUB-47	Aguila/Carefree	26	0.016	8.7	0.01		
	Aguila/Carefree	34	0.120	67.6	0.23		
	Aguila/Carefree	93	0.042	23.7	0.33		
SUB-57	Aguila/Carefree	6	0.001	1.7	0.62		
	Aguila/Carefree	33	0.037	55.4	0.23		
	Aguila/Carefree	72	0.029	43.0	0.09	30.0	100
SUB-58	Aguila/Carefree	6	0.011	10.2	0.62		
	Aguila/Carefree	12	0.008	7.6	0.01		
	Aguila/Carefree	33	0.087	79.0	0.23		
	Aguila/Carefree	72	0.004	3.3	0.09	30.0	100
SUB-59	Aguila/Carefree	6	0.045	55.0	0.62		
	Aguila/Carefree	12	0.002	2.5	0.01		
	Aguila/Carefree	33	0.002	1.9	0.23		
	Aguila/Carefree	96	0.033	40.5	0.07		
SUB-60	Aguila/Carefree	6	0.015	16.6	0.62		
	Aguila/Carefree	96	0.077	83.4	0.07		
SUB-61	Aguila/Carefree	6	0.005	3.7	0.62		
	Aguila/Carefree	12	0.000	0.3	0.01		
	Aguila/Carefree	33	0.000	0.1	0.23		
	Aguila/Carefree	96	0.136	95.9	0.07		
SUB-62	Aguila/Carefree	3	0.003	3.2	0.58		
	Aguila/Carefree	6	0.005	5.4	0.62		
	Aguila/Carefree	12	0.001	0.8	0.01		
	Aguila/Carefree	96	0.089	90.6	0.07		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
SUB-63	Aguila/Carefree	3	0.001	0.9	0.58		
	Aguila/Carefree	96	0.081	98.8	0.07		
	Aguila/Carefree	110	0.000	0.4	0.13		
SUB-64	Aguila/Carefree	3	0.033	46.2	0.58		
	Aguila/Carefree	12	0.023	32.3	0.01		
	Aguila/Carefree	44	0.009	12.4	0.03		
	Aguila/Carefree	96	0.001	1.4	0.07		
	Aguila/Carefree	110	0.005	7.6	0.13		
SUB-69	Aguila/Carefree	6	0.033	6.9	0.62		
	Aguila/Carefree	33	0.196	41.5	0.23		
	Aguila/Carefree	72	0.243	51.6	0.09	30.0	100
SUB-70	Aguila/Carefree	33	0.019	26.5	0.23		
	Aguila/Carefree	72	0.053	73.5	0.09	30.0	100
SUB-71	Aguila/Carefree	33	0.012	33.6	0.23		
	Aguila/Carefree	72	0.023	66.4	0.09	30.0	100
SUB-72	Aguila/Carefree	33	0.052	33.3	0.23		
	Aguila/Carefree	72	0.103	66.7	0.09	30.0	100
SUB-73	Aguila/Carefree	33	0.016	28.5	0.23		
	Aguila/Carefree	72	0.040	71.5	0.09	30.0	100
SUB-74	Aguila/Carefree	33	0.037	23.4	0.23		
	Aguila/Carefree	72	0.120	76.6	0.09	30.0	100
SUB-75	Aguila/Carefree	33	0.009	55.5	0.23		
	Aguila/Carefree	72	0.007	44.5	0.09	30.0	100
SUB-76	Aguila/Carefree	33	0.018	88.7	0.23		
	Aguila/Carefree	72	0.002	11.3	0.09	30.0	100

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms:Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-13	0.54	1.26	262.9	247.0	Natural	0.045	0.30	0.25	5.20	0.23	9	**Tc (hrs)**	0.40	0.34	0.31	0.28	0.27	0.25
												Vel (f/s)	4.57	5.40	5.90	6.53	6.92	7.39
												R (hrs)	0.23	0.19	0.17	0.16	0.15	0.14
SUB14A	0.18	0.97	227.4	224.0	Natural	0.052	0.30	0.15	8.00	0.08	8	**Tc (hrs)**	0.35	0.31	0.29	0.27	0.25	0.24
												Vel (f/s)	4.02	4.55	4.94	5.33	5.69	5.88
												R (hrs)	0.30	0.26	0.24	0.22	0.21	0.20
SUB14B	0.27	1.51	192.7	192.7	Natural	0.049	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.50	0.43	0.40	0.36	0.34	0.32
												Vel (f/s)	4.43	5.16	5.59	6.19	6.48	6.90
												R (hrs)	0.51	0.43	0.39	0.35	0.33	0.31
SUB14C	0.46	1.74	353.6	279.0	Natural	0.046	0.30	0.15	7.60	0.09	6	**Tc (hrs)**	0.45	0.39	0.36	0.33	0.30	0.29
												Vel (f/s)	5.72	6.58	7.13	7.85	8.39	8.74
												R (hrs)	0.37	0.31	0.29	0.26	0.24	0.23
SUB19A	0.11	0.86	367.6	282.0	Natural	0.055	0.30	0.15	7.60	0.09	24	**Tc (hrs)**	0.30	0.27	0.25	0.24	0.23	0.22
												Vel (f/s)	4.26	4.65	4.97	5.30	5.61	5.81
												R (hrs)	0.30	0.27	0.25	0.23	0.22	0.21
SUB19B	0.26	1.36	617.9	315.0	Natural	0.053	0.32	0.24	7.00	0.11	31	**Tc (hrs)**	0.36	0.33	0.31	0.29	0.27	0.26
												Vel (f/s)	5.57	6.14	6.48	6.93	7.36	7.73
												R (hrs)	0.33	0.30	0.28	0.26	0.24	0.23
SUB19C	0.11	0.84	450.7	299.0	Natural	0.056	0.30	0.16	7.30	0.10	35	**Tc (hrs)**	0.28	0.26	0.25	0.23	0.22	0.21
												Vel (f/s)	4.35	4.68	5.01	5.38	5.57	5.78
												R (hrs)	0.29	0.26	0.25	0.23	0.22	0.21
SUB33A	0.06	0.37	377.4	284.0	Natural	0.059	0.30	0.15	7.00	0.11	8	**Tc (hrs)**	0.21	0.18	0.18	0.16	0.15	0.15
												Vel (f/s)	2.61	2.97	3.10	3.33	3.52	3.72
												R (hrs)	0.15	0.13	0.13	0.12	0.11	0.10
SUB33B	0.16	0.93	380.4	285.0	Natural	0.053	0.30	0.15	7.30	0.10	5	**Tc (hrs)**	0.33	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.15	4.82	5.19	5.64	5.96	6.17

* Non default value

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.29	0.25	0.23	0.21	0.20	0.19
SUB33C	0.03	0.40	126.2	126.2	Natural	0.063	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.28	0.25	0.24	0.22	0.21	0.20
												Vel (f/s)	2.07	2.35	2.46	2.65	2.82	2.93
												R (hrs)	0.34	0.29	0.28	0.26	0.24	0.23
SUB33D	0.04	0.60	57.0	57.0	Natural	0.061	0.30	0.25	5.70	0.19	7	**Tc (hrs)**	0.57	0.47	0.43	0.39	0.36	0.34
												Vel (f/s)	1.54	1.88	2.05	2.27	2.42	2.57
												R (hrs)	0.89	0.71	0.65	0.58	0.54	0.51
SUB33E	0.19	0.91	273.5	253.0	Natural	0.051	0.30	0.17	6.80	0.12	30	**Tc (hrs)**	0.30	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.45	4.85	5.07	5.52	5.83	6.04
												R (hrs)	0.23	0.21	0.20	0.18	0.17	0.16
SUB33F	0.02	0.33	219.5	218.0	Natural	0.064	0.30	0.17	6.80	0.12	5	**Tc (hrs)**	0.23	0.20	0.19	0.17	0.17	0.16
												Vel (f/s)	2.15	2.42	2.57	2.83	2.90	3.06
												R (hrs)	0.26	0.23	0.22	0.19	0.19	0.18
SUB-45	0.09	1.08	208.0	207.0	Natural	0.056	0.30	0.15	9.70	0.04	5	**Tc (hrs)**	0.41	0.36	0.33	0.30	0.29	0.27
												Vel (f/s)	3.84	4.42	4.76	5.21	5.50	5.85
												R (hrs)	0.59	0.50	0.46	0.42	0.39	0.37
SUB-47	0.18	1.02	154.3	154.3	Natural	0.052	0.30	0.25	5.40	0.21	5	**Tc (hrs)**	0.49	0.40	0.37	0.33	0.31	0.29
												Vel (f/s)	3.07	3.70	4.08	4.49	4.86	5.12
												R (hrs)	0.45	0.37	0.33	0.30	0.27	0.26
SUB-57	0.07	0.46	921.7	315.0	Natural	0.058	0.30	0.25	5.80	0.18	18	**Tc (hrs)**	0.23	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	2.95	3.37	3.59	3.86	4.04	4.27
												R (hrs)	0.18	0.16	0.15	0.14	0.13	0.12
SUB-58	0.11	0.72	396.1	295.0	Natural	0.055	0.30	0.25	5.30	0.22	6	**Tc (hrs)**	0.31	0.26	0.24	0.22	0.21	0.20
												Vel (f/s)	3.43	4.09	4.44	4.78	5.08	5.28
												R (hrs)	0.27	0.22	0.20	0.19	0.18	0.17

* Non default value

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-59	0.08	1.11	101.5	101.5	Natural	0.060	0.30	0.25	5.00	0.29	11	**Tc (hrs)**	0.70	0.56	0.50	0.45	0.43	0.40
												Vel (f/s)	2.34	2.89	3.23	3.59	3.79	4.03
												R (hrs)	1.12	0.88	0.78	0.70	0.65	0.61
SUB-60	0.09	1.00	112.7	112.7	Natural	0.060	0.30	0.15	7.00	0.13	11	**Tc (hrs)**	0.53	0.46	0.43	0.39	0.37	0.35
												Vel (f/s)	2.75	3.20	3.45	3.74	4.00	4.19
												R (hrs)	0.72	0.61	0.56	0.51	0.47	0.45
SUB-61	0.14	1.40	119.4	119.4	Natural	0.057	0.30	0.15	7.60	0.10	12	**Tc (hrs)**	0.62	0.53	0.49	0.45	0.43	0.41
												Vel (f/s)	3.31	3.91	4.17	4.52	4.79	5.03
												R (hrs)	0.87	0.72	0.67	0.61	0.58	0.55
SUB-62	0.10	0.87	116.8	116.8	Natural	0.055	0.26	0.15	7.60	0.10	20	**Tc (hrs)**	0.42	0.37	0.35	0.33	0.31	0.30
												Vel (f/s)	3.03	3.44	3.65	3.93	4.14	4.31
												R (hrs)	0.48	0.41	0.39	0.36	0.34	0.32
SUB-63	0.08	0.87	121.4	121.4	Natural	0.054	0.27	0.15	8.00	0.08	16	**Tc (hrs)**	0.41	0.37	0.35	0.32	0.30	0.29
												Vel (f/s)	3.09	3.48	3.69	3.98	4.20	4.43
												R (hrs)	0.52	0.45	0.42	0.39	0.37	0.35
SUB-64	0.07	0.81	111.9	111.9	Natural	0.057	0.30	0.15	7.30	0.10	5	**Tc (hrs)**	0.46	0.39	0.36	0.33	0.31	0.30
												Vel (f/s)	2.59	3.03	3.27	3.57	3.80	4.01
												R (hrs)	0.59	0.50	0.46	0.42	0.39	0.37
SUB12A	0.09	0.77	528.1	306.0	Natural	0.056	0.30	0.19	6.60	0.13	25	**Tc (hrs)**	0.28	0.25	0.24	0.22	0.21	0.20
												Vel (f/s)	4.05	4.45	4.75	5.11	5.30	5.54
												R (hrs)	0.29	0.26	0.24	0.22	0.21	0.20
SUB-69	0.47	1.61	871.7	315.0	Natural	0.050	0.30	0.25	6.00	0.18	25	**Tc (hrs)**	0.41	0.35	0.33	0.31	0.30	0.28
												Vel (f/s)	5.79	6.67	7.09	7.67	7.98	8.46
												R (hrs)	0.31	0.26	0.25	0.23	0.22	0.20
SUB-70	0.07	0.85	1535.4	315.0	Natural	0.060	0.30	0.19	6.60	0.14	28	**Tc (hrs)**	0.30	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.16	4.53	4.83	5.24	5.44	5.75

* Non default value

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	0.38	0.35	0.32	0.30	0.28	0.27
SUB-71	0.04	0.41	854.4	315.0	Natural	0.064	0.28	0.19	6.60	0.17	43	**Tc (hrs)**	0.20	0.19	0.18	0.17	0.16	0.16
												Vel (f/s)	2.95	3.13	3.29	3.52	3.69	3.81
												R (hrs)	0.21	0.20	0.19	0.17	0.16	0.16
SUB-72	0.16	0.95	1387.8	315.0	Natural	0.055	0.29	0.19	6.60	0.14	30	**Tc (hrs)**	0.30	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.64	5.07	5.40	5.76	6.08	6.30
												R (hrs)	0.27	0.25	0.23	0.21	0.20	0.19
SUB-73	0.06	0.52	676.9	315.0	Natural	0.062	0.28	0.19	6.60	0.17	47	**Tc (hrs)**	0.23	0.21	0.20	0.19	0.18	0.18
												Vel (f/s)	3.39	3.58	3.74	4.06	4.26	4.36
												R (hrs)	0.22	0.20	0.19	0.18	0.17	0.16
SUB-74	0.16	0.93	1154.3	315.0	Natural	0.056	0.29	0.17	6.80	0.14	37	**Tc (hrs)**	0.30	0.27	0.26	0.24	0.23	0.22
												Vel (f/s)	4.61	5.03	5.29	5.64	5.96	6.17
												R (hrs)	0.26	0.24	0.22	0.21	0.20	0.19
SUB-75	0.02	0.34	970.6	315.0	Natural	0.062	0.23	0.25	6.00	0.22	54	**Tc (hrs)**	0.18	0.17	0.17	0.15	0.15	0.14
												Vel (f/s)	2.79	2.92	2.99	3.24	3.42	3.51
												R (hrs)	0.24	0.23	0.23	0.21	0.19	0.19
SUB-76	0.02	0.34	440.5	299.0	Natural	0.061	0.26	0.25	5.20	0.31	30	**Tc (hrs)**	0.19	0.18	0.17	0.16	0.15	0.15
												Vel (f/s)	2.60	2.79	2.92	3.16	3.32	3.42
												R (hrs)	0.23	0.22	0.20	0.19	0.18	0.17
SUB46A	0.03	0.48	269.7	251.0	Natural	0.062	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.25	0.23	0.21	0.20	0.19	0.18
												Vel (f/s)	2.77	3.13	3.31	3.59	3.74	3.93
												R (hrs)	0.32	0.28	0.26	0.24	0.23	0.22
SUB46B	0.03	0.56	243.2	237.0	Natural	0.062	0.30	0.15	7.00	0.11	5	**Tc (hrs)**	0.29	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	2.85	3.34	3.53	3.78	4.03	4.19
												R (hrs)	0.42	0.36	0.34	0.31	0.29	0.28

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-18	0.39	1.47	310.2	266.0	Natural	0.051	0.31	0.19	7.30	0.10	34	**Tc (hrs)**	0.39	0.35	0.33	0.31	0.30	0.28
												Vel (f/s)	5.56	6.23	6.55	7.00	7.28	7.62
												R (hrs)	0.30	0.27	0.25	0.24	0.22	0.21

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-50	V.L.D.R.	0.217	95.7	Normal	20.0	5	0.30	0.050	Low	0.051
	V.L.D.R.	0.001	0.4	Dry *	20.0	5	0.30	0.050	Low	0.084
	L.D.R.	0.002	0.8	Normal	50.0	15	0.30	0.050	Low	0.079
	L.D.R.	0.001	3.1	Normal	50.0	15	0.30	0.050	Low	0.071
SUB-51	V.L.D.R.	0.190	75.4	Dry *	20.0	5	0.30	0.050	Low	0.051
	V.L.D.R.	0.062	24.6	Normal	20.0	5	0.30	0.050	Low	0.058
SUB-54	V.L.D.R.	0.094	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB-65	V.L.D.R.	0.175	94.8	Normal	20.0	5	0.30	0.050	Low	0.052
	L.D.R.	0.003	1.8	Dry *	50.0	15	0.30	0.050	Low	0.075
	COMM	0.006	3.3	Normal	75.0	80	0.10	0.020	Min	0.036
SUB-66	V.L.D.R.	0.072	39.5	Normal	20.0	5	0.30	0.050	Low	0.057
	V.L.D.R.	0.111	60.5	Normal	20.0	5	0.30	0.050	Low	0.055
SUB-68	V.L.D.R.	0.052	41.9	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.070	57.1	Normal	20.0	5	0.30	0.050	Low	0.057
	COMM	0.001	1.0	Normal	75.0	80	0.10	0.020	Min	0.041

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01		9	0.053	0.045	0.053	4576	0.0131	924.00	**Sta**	0.0	10.3	19.3	25.9	32.9	53.6	89.4	104.0
									Elev	924.0	922.0	920.0	918.0	918.0	920.0	922.0	924.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-50	Aguila/Carefree	8	0.012	5.5	0.96		
		Aguila/Carefree	33	0.038	17.2	0.23		
		Aguila/Carefree	72	0.171	77.3	0.09	30.0	100
	SUB-51	Aguila/Carefree	3	0.068	26.9	0.58		
		Aguila/Carefree	8	0.007	2.6	0.96		
		Aguila/Carefree	33	0.130	51.7	0.23		
		Aguila/Carefree	72	0.030	11.9	0.09	30.0	100
		Aguila/Carefree	121	0.003	1.1	0.12		
		Aguila/Carefree	12	0.015	5.9	0.58 *		
	SUB-54	Aguila/Carefree	3	0.021	22.3	0.58		
		Aguila/Carefree	12	0.069	73.1	0.01		
		Aguila/Carefree	33	0.004	4.6	0.23		
	SUB-65	Aguila/Carefree	12	0.001	0.5	0.01		
		Aguila/Carefree	44	0.011	6.0	0.03		
		Aguila/Carefree	96	0.157	85.3	0.07		
		Aguila/Carefree	110	0.015	8.2	0.13		
	SUB-66	Aguila/Carefree	3	0.037	20.2	0.58		
		Aguila/Carefree	12	0.044	23.8	0.01		
		Aguila/Carefree	44	0.081	44.3	0.03		
		Aguila/Carefree	96	0.000		0.07		
		Aguila/Carefree	98	0.011	6.2	0.37		
		Aguila/Carefree	110	0.010	5.5	0.13		
	SUB-68	Aguila/Carefree	12	0.044	35.7	0.01		
		Aguila/Carefree	44	0.044	35.8	0.03		
		Aguila/Carefree	96	0.021	16.9	0.07		
		Aguila/Carefree	98	0.005	4.2	0.37		
		Aguila/Carefree	110	0.009	7.4	0.13		

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-50	0.22	0.90	290.8	260.0	Natural	0.052	0.30	0.19	6.60	0.13	29	**Tc (hrs)**	0.30	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.40	4.73	5.02	5.45	5.76	5.97
												R (hrs)	0.21	0.20	0.18	0.17	0.16	0.15
SUB-51	0.25	1.58	276.5	255.0	Natural	0.053	0.30	0.33	4.55	0.32	9	**Tc (hrs)**	0.57	0.46	0.42	0.38	0.35	0.33
												Vel (f/s)	4.06	5.01	5.56	6.18	6.62	7.04
												R (hrs)	0.63	0.50	0.44	0.39	0.36	0.34
SUB-54	0.09	0.78	118.1	118.1	Natural	0.056	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.41	0.36	0.34	0.31	0.29	0.28
												Vel (f/s)	2.77	3.20	3.38	3.71	3.92	4.16
												R (hrs)	0.44	0.37	0.35	0.32	0.30	0.28
SUB-65	0.18	1.13	105.3	105.3	Natural	0.052	0.29	0.15	8.00	0.08	8	**Tc (hrs)**	0.53	0.46	0.43	0.39	0.37	0.35
												Vel (f/s)	3.13	3.62	3.86	4.23	4.47	4.74
												R (hrs)	0.53	0.45	0.42	0.38	0.36	0.33
SUB-66	0.18	1.13	78.8	78.8	Natural	0.056	0.30	0.15	8.80	0.06	5	**Tc (hrs)**	0.64	0.54	0.50	0.45	0.43	0.41
												Vel (f/s)	2.58	3.08	3.34	3.65	3.83	4.01
												R (hrs)	0.66	0.54	0.49	0.45	0.43	0.40
SUB-68	0.12	1.03	100.8	100.8	Natural	0.058	0.30	0.13	10.10	0.03	6	**Tc (hrs)**	0.53	0.46	0.43	0.40	0.38	0.36
												Vel (f/s)	2.88	3.26	3.52	3.81	4.03	4.22
												R (hrs)	0.61	0.53	0.49	0.45	0.42	0.40

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-50	V.L.D.R.	0.217	95.7	Normal	20.0	5	0.30	0.050	Low	0.051
	V.L.D.R.	0.001	0.4	Dry *	20.0	5	0.30	0.050	Low	0.084
	L.D.R.	0.002	0.8	Normal	50.0	15	0.30	0.050	Low	0.079
	L.D.R.	0.007	3.1	Normal	50.0	15	0.30	0.050	Low	0.071
SUB-51	V.L.D.R.	0.190	75.4	Dry *	20.0	5	0.30	0.050	Low	0.051
	V.L.D.R.	0.062	24.6	Normal	20.0	5	0.30	0.050	Low	0.058
SUB-54	V.L.D.R.	0.094	100.0	Normal	20.0	5	0.30	0.050	Low	0.056
SUB-65	V.L.D.R.	0.175	94.8	Normal	20.0	5	0.30	0.050	Low	0.052
	L.D.R.	0.003	1.8	Dry *	50.0	15	0.30	0.050	Low	0.075
	COMM	0.006	3.3	Normal	75.0	80	0.10	0.020	Min	0.036
SUB-66	V.L.D.R.	0.072	39.5	Normal	20.0	5	0.30	0.050	Low	0.057
	V.L.D.R.	0.111	60.5	Normal	20.0	5	0.30	0.050	Low	0.055
SUB-68	V.L.D.R.	0.052	41.9	Normal	20.0	5	0.30	0.050	Low	0.059
	V.L.D.R.	0.070	57.1	Normal	20.0	5	0.30	0.050	Low	0.057
	COMM	0.001	1.0	Normal	75.0	80	0.10	0.020	Min	0.041

* Custom Value (not default value)

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
01		9	0.053	0.045	0.053	4576	0.0131	924.00	**Sta**	0.0	10.3	19.3	25.9	32.9	53.6	89.4	104.0
									Elev	924.0	922.0	920.0	918.0	918.0	920.0	922.0	924.0

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-50	Aguila/Carefree	8	0.012	5.5	0.96		
		Aguila/Carefree	33	0.038	17.2	0.23		
		Aguila/Carefree	72	0.171	77.3	0.09	30.0	100
	SUB-51	Aguila/Carefree	3	0.068	26.9	0.58		
		Aguila/Carefree	8	0.007	2.6	0.96		
		Aguila/Carefree	33	0.130	51.7	0.23		
		Aguila/Carefree	72	0.030	11.9	0.09	30.0	100
		Aguila/Carefree	121	0.003	1.1	0.12		
		Aguila/Carefree	12	0.015	5.9	0.58 *		
	SUB-54	Aguila/Carefree	3	0.021	22.3	0.58		
		Aguila/Carefree	12	0.069	73.1	0.01		
		Aguila/Carefree	33	0.004	4.6	0.23		
	SUB-65	Aguila/Carefree	12	0.001	0.5	0.01		
		Aguila/Carefree	44	0.011	6.0	0.03		
		Aguila/Carefree	96	0.157	85.3	0.07		
		Aguila/Carefree	110	0.015	8.2	0.13		
	SUB-66	Aguila/Carefree	3	0.037	20.2	0.58		
		Aguila/Carefree	12	0.044	23.8	0.01		
		Aguila/Carefree	44	0.081	44.3	0.03		
		Aguila/Carefree	96	0.000		0.07		
		Aguila/Carefree	98	0.011	6.2	0.37		
		Aguila/Carefree	110	0.010	5.5	0.13		
	SUB-68	Aguila/Carefree	12	0.044	35.7	0.01		
		Aguila/Carefree	44	0.044	35.8	0.03		
		Aguila/Carefree	96	0.021	16.9	0.07		
		Aguila/Carefree	98	0.005	4.2	0.37		
		Aguila/Carefree	110	0.009	7.4	0.13		

* Custom Value (not default value)

Sub Basin Data

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
SUB-50	0.22	0.90	290.8	260.0	Natural	0.052	0.30	0.19	6.60	0.13	29	**Tc (hrs)**	0.30	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	4.40	4.73	5.02	5.45	5.76	5.97
												R (hrs)	0.21	0.20	0.18	0.17	0.16	0.15
SUB-51	0.25	1.58	276.5	255.0	Natural	0.053	0.30	0.33	4.55	0.32	9	**Tc (hrs)**	0.57	0.46	0.42	0.38	0.35	0.33
												Vel (f/s)	4.06	5.01	5.56	6.18	6.62	7.04
												R (hrs)	0.63	0.50	0.44	0.39	0.36	0.34
SUB-54	0.09	0.78	118.1	118.1	Natural	0.056	0.30	0.13	10.10	0.03	5	**Tc (hrs)**	0.41	0.36	0.34	0.31	0.29	0.28
												Vel (f/s)	2.77	3.20	3.38	3.71	3.92	4.16
												R (hrs)	0.44	0.37	0.35	0.32	0.30	0.28
SUB-65	0.18	1.13	105.3	105.3	Natural	0.052	0.29	0.15	8.00	0.08	8	**Tc (hrs)**	0.53	0.46	0.43	0.39	0.37	0.35
												Vel (f/s)	3.13	3.62	3.86	4.23	4.47	4.74
												R (hrs)	0.53	0.45	0.42	0.38	0.36	0.33
SUB-66	0.18	1.13	78.8	78.8	Natural	0.056	0.30	0.15	8.80	0.06	5	**Tc (hrs)**	0.64	0.54	0.50	0.45	0.43	0.41
												Vel (f/s)	2.58	3.08	3.34	3.65	3.83	4.01
												R (hrs)	0.66	0.54	0.49	0.45	0.43	0.40
SUB-68	0.12	1.03	100.8	100.8	Natural	0.058	0.30	0.13	10.10	0.03	6	**Tc (hrs)**	0.53	0.46	0.43	0.40	0.38	0.36
												Vel (f/s)	2.88	3.26	3.52	3.81	4.03	4.22
												R (hrs)	0.61	0.53	0.49	0.45	0.42	0.40

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-23	V.L.D.R.	0.405	77.4	Normal	20.0	5	0.30	0.050	Low	0.047
	DESERT	0.118	22.6	Dry	25.0		0.35	0.030	Low	0.054
SUB-24	V.L.D.R.	0.146	54.7	Normal	20.0	5	0.30	0.050	Low	0.053
	DESERT	0.121	45.3	Dry	25.0		0.35	0.030	Low	0.054
SUB-25	DESERT	0.799	85.3	Dry	25.0		0.35	0.030	Low	0.043
	V.L.D.R.	0.016	1.7	Dry *	20.0	5	0.30	0.050	Low	0.066
	V.L.D.R.	0.122	13.0	Dry *	20.0	5	0.30	0.050	Low	0.054

* Custom Value (not default value)

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-23	Aguila/Carefree	8	0.012	2.3	0.96		
		Aguila/Carefree	33	0.019	3.7	0.23		
		Aguila/Carefree	72	0.492	94.1	0.09	30.0	100
	SUB-24	Aguila/Carefree	8	0.012	4.3	0.96		
		Aguila/Carefree	33	0.007	2.4	0.23		
		Aguila/Carefree	72	0.248	92.9	0.09	30.0	100
		Aguila/Carefree	121	0.001	0.3	0.12		
	SUB-25	Aguila/Carefree	3	0.028	3.0	0.58		
		Aguila/Carefree	33	0.006	0.7	0.23		
		Aguila/Carefree	72	0.856	91.3	0.09	30.0	100
		Aguila/Carefree	93	0.011	1.2	0.33		
		Aguila/Carefree	96	0.008	0.8	0.07		
		Aguila/Carefree	121	0.027	2.9	0.12		

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-23	0.52	1.48	229.1	225.0	Natural	0.049	0.31	0.20	7.00	0.11	32	**Tc (hrs)**	0.48	0.39	0.35	0.32	0.30	0.28
												Vel (f/s)	4.53	5.59	6.13	6.76	7.24	7.67
												R (hrs)	0.32	0.26	0.23	0.21	0.19	0.18
SUB-24	0.27	1.29	463.8	299.0	Natural	0.053	0.32	0.24	7.00	0.11	31	**Tc (hrs)**	0.41	0.33	0.30	0.28	0.26	0.25
												Vel (f/s)	4.58	5.68	6.22	6.88	7.33	7.69
												R (hrs)	0.36	0.28	0.26	0.23	0.21	0.20
SUB-25	0.94	2.23	225.9	223.0	Natural	0.045	0.34	0.35	7.00	0.12	28	**Tc (hrs)**	0.73	0.57	0.50	0.44	0.41	0.38
												Vel (f/s)	4.49	5.77	6.49	7.40	8.02	8.54
												R (hrs)	0.51	0.39	0.34	0.29	0.27	0.25

* Non default value

Land Use Data

Sub Basin ID	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn	Kb Type	Kb
Major Basin:	**01**									
SUB-23	V.L.D.R.	0.405	77.4	Normal	20.0	5	0.30	0.050	Low	0.047
	DESERT	0.118	22.6	Dry	25.0		0.35	0.030	Low	0.054
SUB-24	V.L.D.R.	0.146	54.7	Normal	20.0	5	0.30	0.050	Low	0.053
	DESERT	0.121	45.3	Dry	25.0		0.35	0.030	Low	0.054
SUB-25	DESERT	0.799	85.3	Dry	25.0		0.35	0.030	Low	0.043
	V.L.D.R.	0.016	1.7	Dry *	20.0	5	0.30	0.050	Low	0.066
	V.L.D.R.	0.122	13.0	Dry *	20.0	5	0.30	0.050	Low	0.054

* Custom Value (not default value)

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin	**01**							
	SUB-23	Aguila/Carefree	8	0.012	2.3	0.96		
		Aguila/Carefree	33	0.019	3.7	0.23		
		Aguila/Carefree	72	0.492	94.1	0.09	30.0	100
	SUB-24	Aguila/Carefree	8	0.012	4.3	0.96		
		Aguila/Carefree	33	0.007	2.4	0.23		
		Aguila/Carefree	72	0.248	92.9	0.09	30.0	100
		Aguila/Carefree	121	0.001	0.3	0.12		
	SUB-25	Aguila/Carefree	3	0.028	3.0	0.58		
		Aguila/Carefree	33	0.006	0.7	0.23		
		Aguila/Carefree	72	0.856	91.3	0.09	30.0	100
		Aguila/Carefree	93	0.011	1.2	0.33		
		Aguila/Carefree	96	0.008	0.8	0.07		
		Aguila/Carefree	121	0.027	2.9	0.12		

* Custom Value (not default value)

Sub Basin Data

7/23/2007

Basin: 01 | Storms: Multiple | Duration: 24 Hour | Loss Method:Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SUB-23	0.52	1.48	229.1	225.0	Natural	0.049	0.31	0.20	7.00	0.11	32	**Tc (hrs)**	0.48	0.39	0.35	0.32	0.30	0.28
												Vel (f/s)	4.53	5.59	6.13	6.76	7.24	7.67
												R (hrs)	0.32	0.26	0.23	0.21	0.19	0.18
SUB-24	0.27	1.29	463.8	299.0	Natural	0.053	0.32	0.24	7.00	0.11	31	**Tc (hrs)**	0.41	0.33	0.30	0.28	0.26	0.25
												Vel (f/s)	4.58	5.68	6.22	6.88	7.33	7.69
												R (hrs)	0.36	0.28	0.26	0.23	0.21	0.20
SUB-25	0.94	2.23	225.9	223.0	Natural	0.045	0.34	0.35	7.00	0.12	28	**Tc (hrs)**	0.73	0.57	0.50	0.44	0.41	0.38
												Vel (f/s)	4.49	5.77	6.49	7.40	8.02	8.54
												R (hrs)	0.51	0.39	0.34	0.29	0.27	0.25

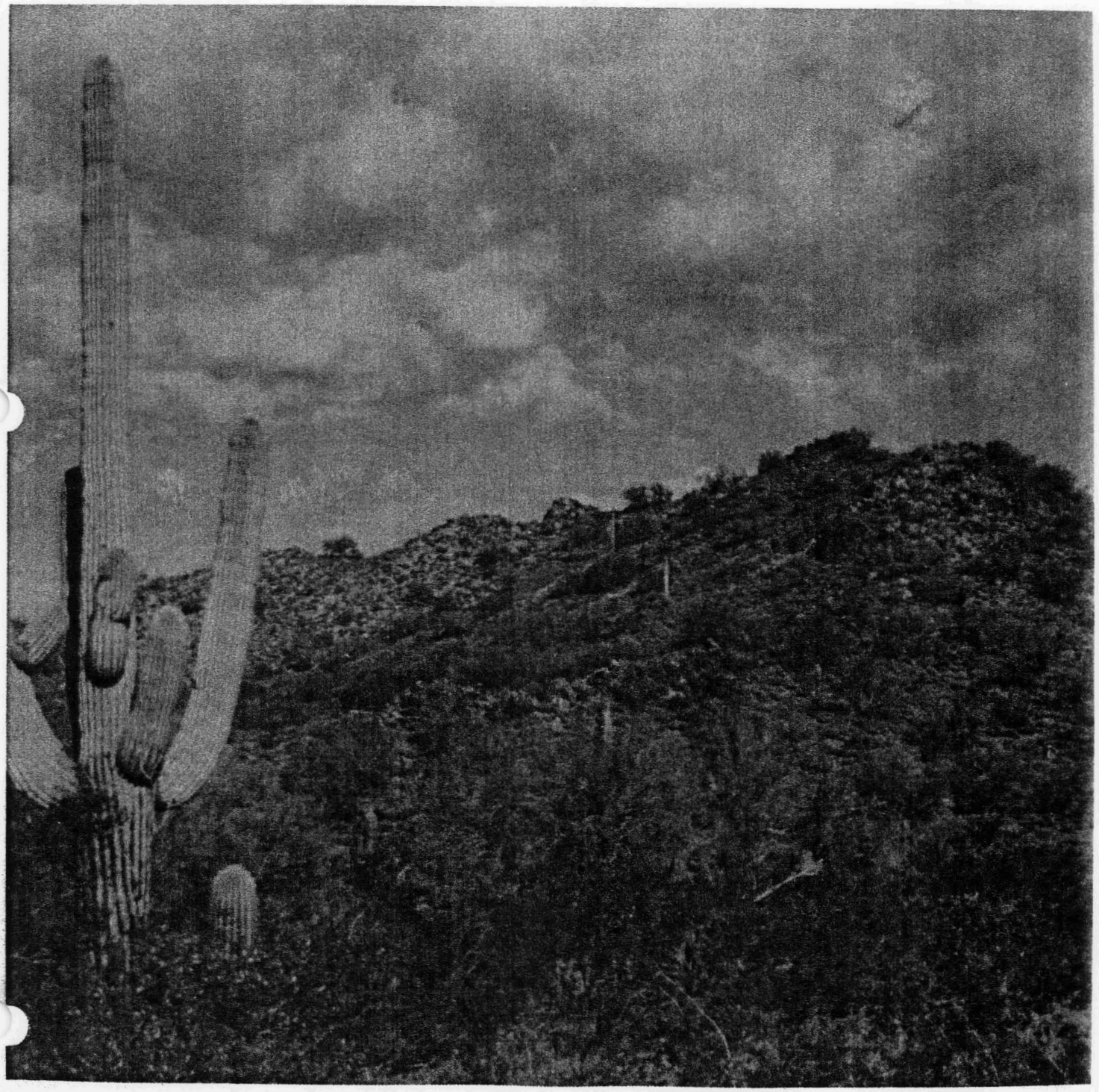
* Non default value

United States
Department of
Agriculture

Soil
Conservation
ervice

In Cooperation with
United States Department
of the Interior,
Bureau of Indian
Affairs and Bureau
of Land Management,
and the Arizona
Agricultural
Experiment Station

Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona



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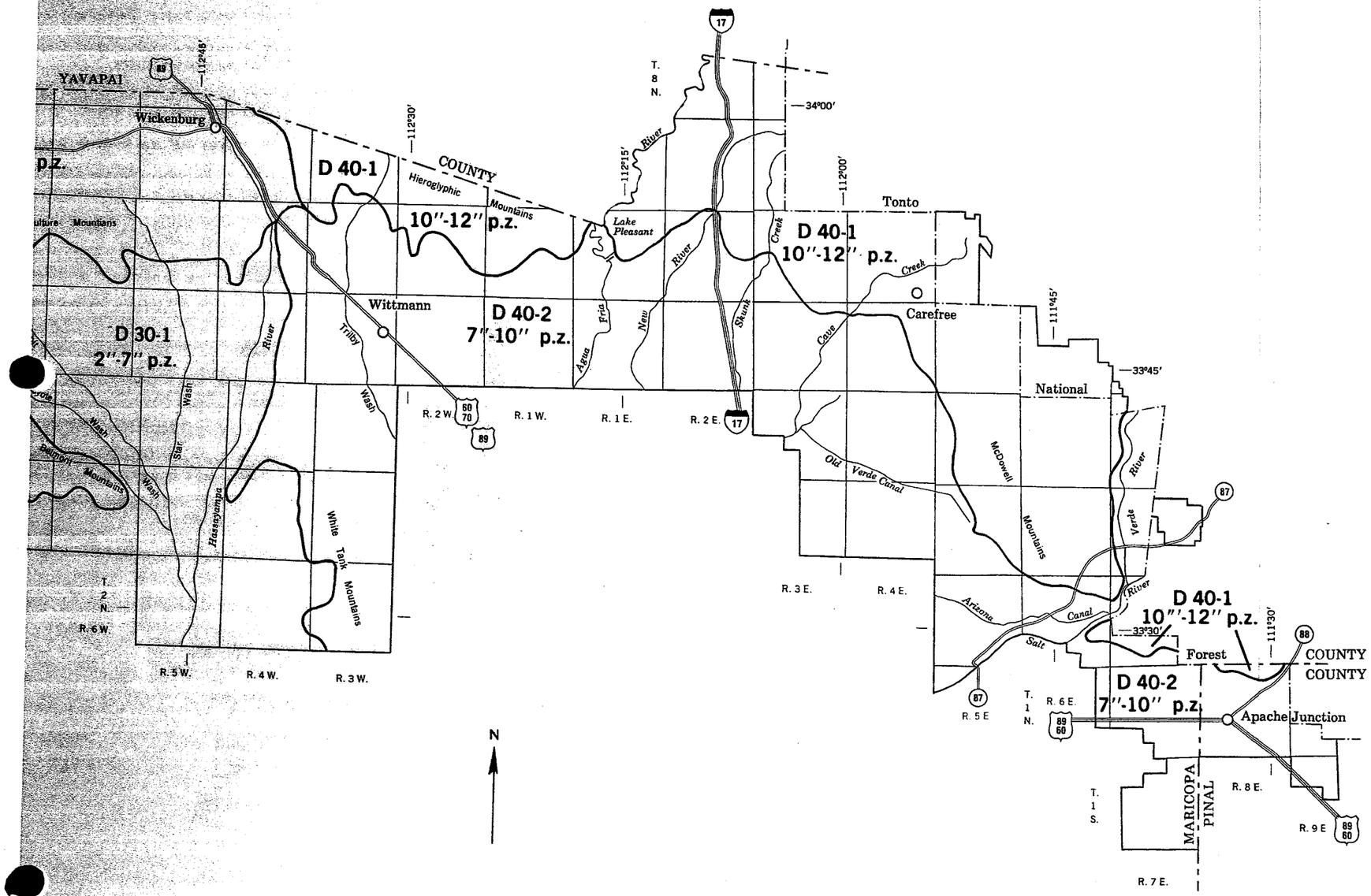
Issued April 1986



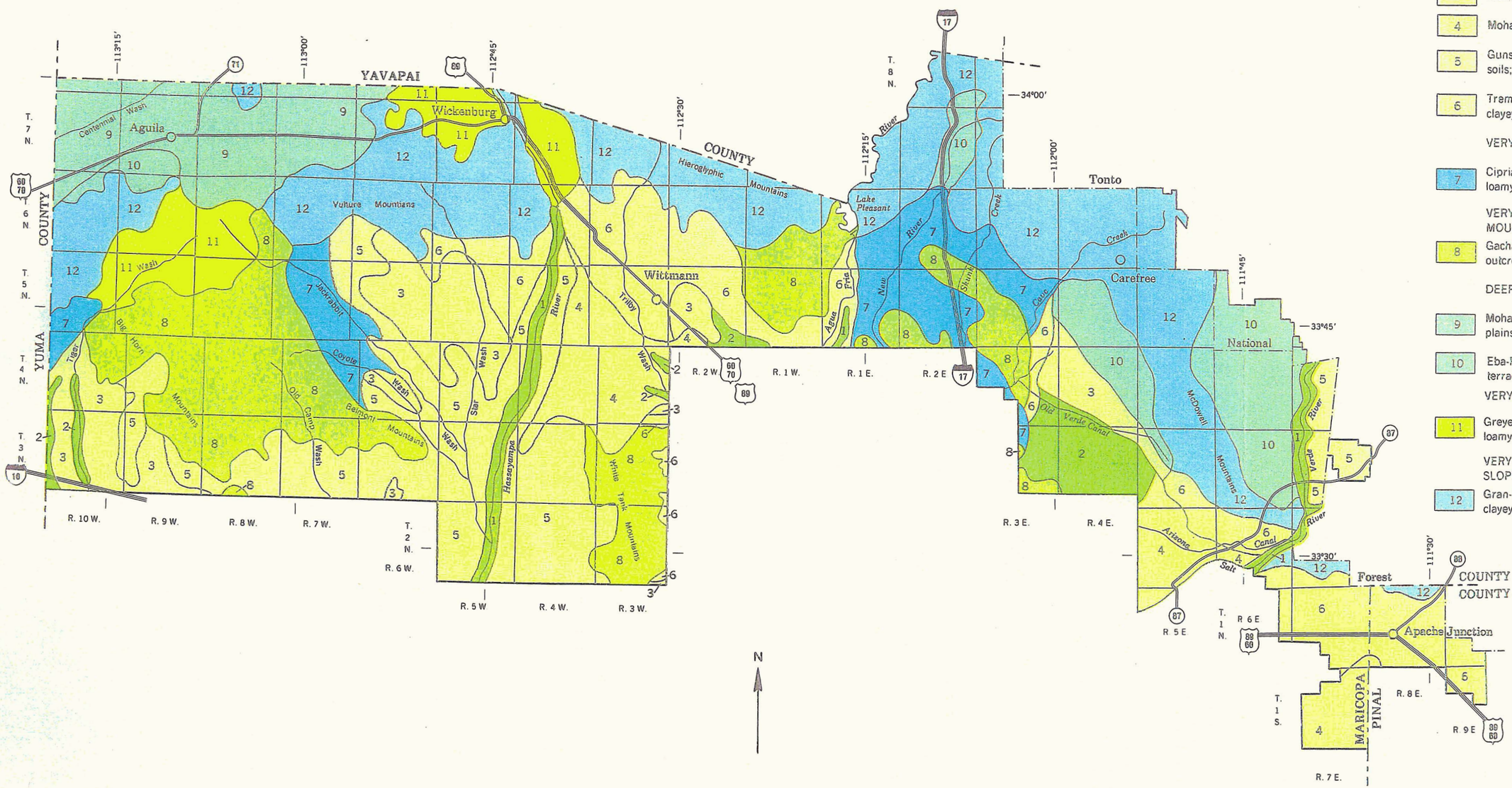
SUBRESOURCE AREA AND PRECIPITATION ZONES

AGUILA-CAREFREE AREA
PARTS OF MARICOPA AND PINAL COUNTIES
ARIZONA

Scale 1:506,880

2 0 2 4 6 8 Miles

2 0 4 8 12 16 Km



DEEP, VERY WARM SOILS; ON FL

1 Carrizo: Nearly level and gently slo

2 Gilman: Nearly level, rarely flooded

DEEP, VERY WARM SOILS; ON FA

3 Momoli-Carrizo-Denure: Nearly lev

4 Mohall-Contine: Nearly level and ge

5 Gunsight-Rillito-Chuckawalla: Dom soils; on fan terraces

6 Tremant-Ebon-Pinamt: Dominantly clayey soils; on fan terraces

VERY SHALLOW, SHALLOW, AND

7 Cipriano-Suncity-Carefree: Nearly loamy soils; on fan terraces

VERY SHALLOW AND SHALLOW, MOUNTAIN SLOPES

8 Gachado-Rock outcrop-Quilotosa: D outcrop; on hill slopes and mountai

DEEP, WARM SOILS; ON FAN TER

9 Mohave-Continental-Guest: Nearly plains

10 Eba-Pinaleno: Dominantly gently s terraces

VERY SHALLOW, SHALLOW, AND

11 Greyeagle-Continental-Nickel: Dom loamy and clayey soils; on fan terra

VERY SHALLOW AND SHALLOW, SLOPES

12 Gran-Rock outcrop-Lehmans: Dom clayey soils, and Rock outcrop; on h

A

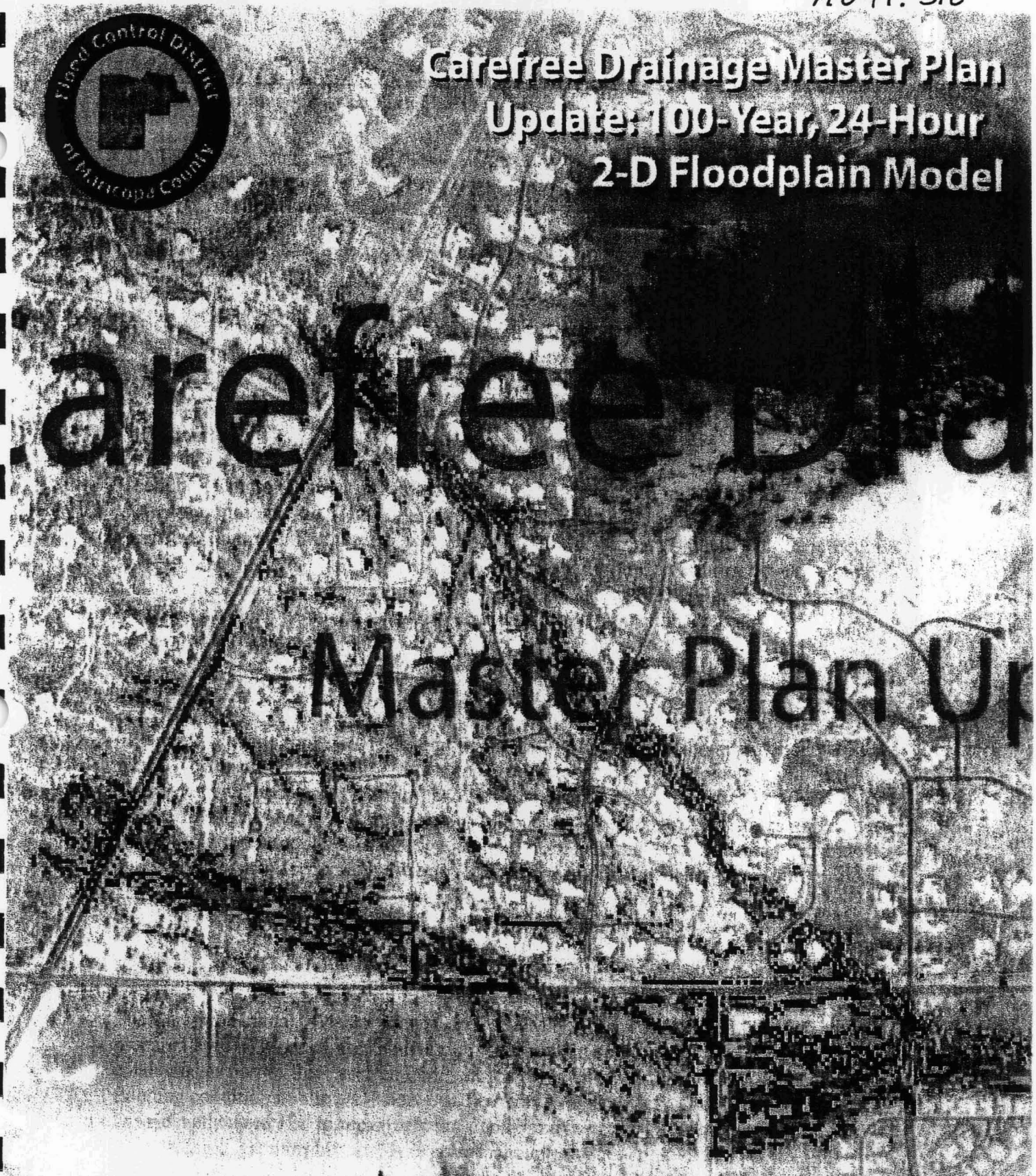
PARTS OF

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

Compiled 1983

A041.310

Carefree Drainage Master Plan Update: 100-Year, 24-Hour 2-D Floodplain Model



Prepared for:

Flood Control District of
Maricopa County
2801 West Durango Street
Phoenix, AZ 85009

August 2005

Prepared by:

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8400 South Kyrene Road, Suite 201
Tempe, AZ 85284
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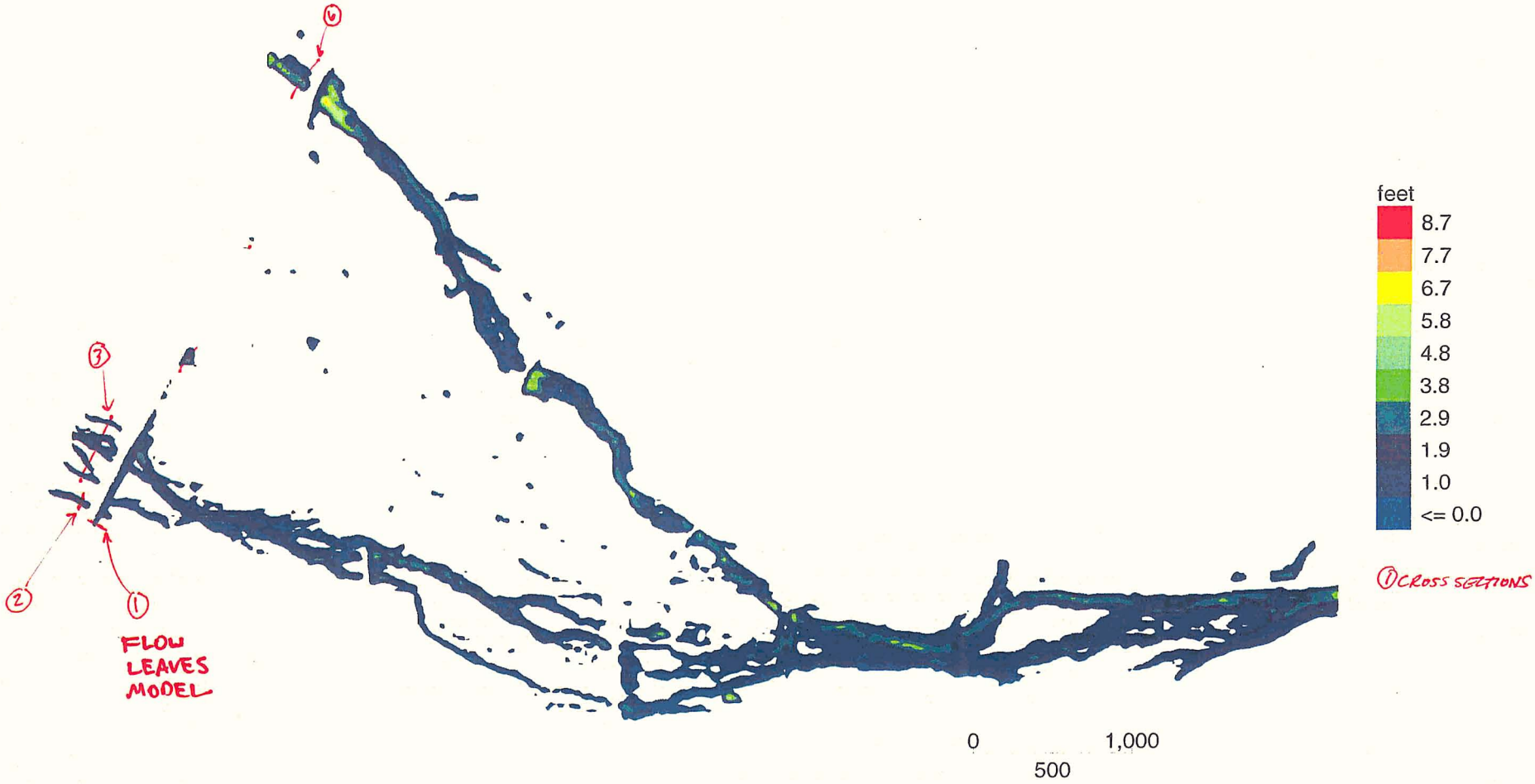
Grid Element Maximum Flow Depth



HDR | ONE COMPANY Many Solutions™

Project: Cave Creek Dam	Computed: MAPO	Date: 4-25-07	
Subject: Carefree FLO-2D Model	Checked:	Date:	
Task: Floodplain XSECS	Page: 1	of: 1	
Job #:	No: 40933		

FPXSEC DATA

1) 456, 411, 368, 326 FLOWS : SOUTHWEST (7)

2) 217, 254, 292, 332 FLOWS : NORTHWEST (8)

3) 113, 139, 167, 199, 232, 269, 307, 347, 391, 436, 483, 534, 588, 646, 704, 765, 828, 894, 962, FLOWS : WEST (4)

4) 2617, 2731, 2848, 2966, 3085, 3206 FLOWS : NORTHWEST (8) Not used

5) 5161, 5315, 5472, 5634, 5802 FLOWS : NORTHWEST (8)

6) 8010, 8204, 8399, 8594, 8792, 8992, 9192 FLOWS : NORTHWEST (8)

CADPTS.DAT = 34, 439

Revised Carefree Floodplain Cross Sections for Cave Creek Hydrology – 04-26-2007
24-Hour Storm Event

THE MAXIMUM DISCHARGE FROM CROSS SECTION 1 IS:
139.29 CFS AT TIME: 4.52 HOURS
THE TOTAL VOLUME OF DISCHARGE IS: 10.09 AF

HYDROGRAPH AND AVERAGE FLOODPLAIN HYDRAULICS FOR CROSS SECTION NO: 1

TIME (HRS)	TOPWID (FT)	DEPTH (FT)	VELOCITY (FPS)	DISCHARGE (CFS)
3.70	60.00	0.08	0.02	0.11
3.80	80.00	0.11	0.06	0.54
3.90	80.00	0.19	0.01	0.19
4.00	80.00	0.24	0.05	0.97
4.10	40.00	0.52	0.18	3.87
4.20	40.00	0.63	0.51	12.86
4.30	40.00	0.70	0.52	14.67
4.40	60.00	0.67	0.96	38.36
4.50	60.00	1.00	2.26	135.07
4.60	60.00	0.99	2.24	133.84
4.70	60.00	0.95	2.15	122.69
4.80	60.00	0.94	1.93	108.38
4.90	60.00	0.88	1.69	89.06
5.00	60.00	0.86	1.60	82.41
5.10	60.00	0.83	1.41	70.10
5.20	60.00	0.79	1.30	62.16
5.30	60.00	0.79	1.14	53.79
5.40	60.00	0.75	1.02	46.04
5.50	60.00	0.67	0.93	37.29
5.60	60.00	0.64	0.88	33.93
5.70	40.00	0.79	0.88	28.00
5.80	60.00	0.52	0.66	20.54
5.90	40.00	0.72	0.55	15.84
6.00	40.00	0.64	0.47	12.15
6.10	40.00	0.59	0.27	6.43
6.20	40.00	0.54	0.18	3.75
6.30	40.00	0.50	0.12	2.44
6.40	40.00	0.65	0.52	13.44
6.50	40.00	0.63	0.46	11.79
6.60	40.00	0.58	0.41	9.45
6.70	40.00	0.59	0.49	11.53
6.80	40.00	0.57	0.25	5.71
6.90	40.00	0.54	0.19	4.22
7.00	60.00	0.37	0.16	3.59
7.10	40.00	0.52	0.14	3.00
7.20	40.00	0.50	0.12	2.41
7.30	40.00	0.48	0.10	1.97
7.40	40.00	0.47	0.09	1.59
7.50	40.00	0.45	0.07	1.31
7.60	40.00	0.44	0.06	1.14
7.70	40.00	0.43	0.06	1.03
7.80	40.00	0.43	0.06	1.04

7.90	40.00	0.43	0.06	1.00
8.00	40.00	0.41	0.05	0.82
8.10	40.00	0.41	0.05	0.78
8.20	40.00	0.42	0.03	0.43
8.30	40.00	0.42	0.02	0.40
8.40	20.00	0.76	0.02	0.30
8.50	20.00	0.73	0.02	0.24
8.60	20.00	0.71	0.01	0.20
8.70	40.00	0.37	0.02	0.22
8.80	20.00	0.67	0.01	0.13
8.90	20.00	0.66	0.01	0.11
9.00	20.00	0.64	0.01	0.09
9.10	20.00	0.62	0.01	0.07
9.20	20.00	0.60	0.00	0.04
9.30	20.00	0.58	0.00	0.03
9.40	20.00	0.56	0.00	0.02
9.50	20.00	0.55	0.00	0.01
9.60	20.00	0.55	0.00	0.01
9.70	20.00	0.54	0.00	0.01
9.80	20.00	0.54	0.00	0.00
9.90	20.00	0.54	0.00	0.00
10.10	20.00	0.54	0.00	0.00
10.20	20.00	0.54	0.00	0.00
10.30	20.00	0.05	0.01	0.01
10.60	20.00	0.54	0.00	0.00
10.70	20.00	0.54	0.00	0.00
10.80	20.00	0.54	0.00	0.00
10.90	20.00	0.54	0.00	0.00
11.00	20.00	0.54	0.00	0.00
11.50	20.00	0.54	0.00	0.00
11.60	20.00	0.54	0.00	0.00
11.70	20.00	0.54	0.00	0.00
12.00	20.00	0.54	0.00	0.00
12.60	20.00	0.54	0.00	0.00
13.10	20.00	0.54	0.00	0.00
13.70	20.00	0.05	0.03	0.03
14.80	20.00	0.54	0.00	0.00
15.00	20.00	0.54	0.00	0.00
15.60	20.00	0.54	0.00	0.00

THE MAXIMUM DISCHARGE FROM CROSS SECTION 2 IS:
212.13 CFS AT TIME: 4.57 HOURS
THE TOTAL VOLUME OF DISCHARGE IS: 23.19 AF

HYDROGRAPH AND AVERAGE FLOODPLAIN HYDRAULICS FOR CROSS SECTION NO: 2

TIME (HRS)	TOPWID (FT)	DEPTH (FT)	VELOCITY (FPS)	DISCHARGE (CFS)
3.70	20.00	0.05	0.06	0.06
3.80	80.00	0.05	0.05	0.21
3.90	80.00	0.12	0.53	4.92
4.00	80.00	0.20	1.00	15.82
4.10	60.00	0.39	1.81	42.09
4.20	60.00	0.50	2.26	68.30
4.30	60.00	0.52	2.24	70.34
4.40	60.00	0.63	2.20	82.67
4.50	80.00	0.84	2.96	198.46
4.60	80.00	0.86	3.05	208.82
4.70	80.00	0.82	2.95	193.16
4.80	60.00	0.98	2.82	164.98
4.90	80.00	0.68	2.62	143.11
5.00	60.00	0.79	2.49	117.68
5.10	60.00	0.74	2.41	107.17
5.20	60.00	0.70	2.37	99.98
5.30	80.00	0.51	2.25	91.35
5.40	60.00	0.65	2.27	87.97
5.50	80.00	0.49	2.14	83.27
5.60	60.00	0.62	2.17	80.93
5.70	60.00	0.59	2.14	76.24
5.80	60.00	0.58	2.13	74.23
5.90	60.00	0.55	2.15	70.99
6.00	60.00	0.52	2.15	67.18
6.10	60.00	0.50	2.12	63.35
6.20	60.00	0.48	2.11	60.23
6.30	60.00	0.45	2.05	55.60
6.40	60.00	0.37	1.68	37.08
6.50	60.00	0.36	1.61	34.40
6.60	60.00	0.34	1.51	30.86
6.70	60.00	0.32	1.42	27.52
6.80	60.00	0.31	1.34	25.07
6.90	60.00	0.30	1.31	23.88
7.00	40.00	0.41	1.33	21.83
7.10	40.00	0.39	1.27	19.98
7.20	60.00	0.27	1.15	18.41
7.30	40.00	0.36	1.17	16.76
7.40	40.00	0.34	1.11	15.18
7.50	40.00	0.32	1.05	13.65
7.60	40.00	0.31	1.02	12.63
7.70	60.00	0.22	0.91	11.77
7.80	40.00	0.28	0.94	10.72
7.90	40.00	0.27	0.87	9.53
8.00	40.00	0.26	0.83	8.73
8.10	20.00	0.45	0.89	8.01

8.20	20.00	0.43	0.86	7.35
8.30	20.00	0.40	0.83	6.70
8.40	20.00	0.39	0.82	6.45
8.50	20.00	0.37	0.79	5.83
8.60	20.00	0.36	0.78	5.52
8.70	20.00	0.35	0.77	5.36
8.80	40.00	0.19	0.66	5.10
8.90	20.00	0.33	0.74	4.86
9.00	20.00	0.31	0.71	4.44
9.10	20.00	0.29	0.69	4.07
9.20	20.00	0.29	0.68	3.90
9.30	20.00	0.28	0.67	3.73
9.40	20.00	0.26	0.65	3.42
9.50	20.00	0.25	0.63	3.17
9.60	20.00	0.25	0.62	3.03
9.70	20.00	0.24	0.61	2.93
9.80	20.00	0.23	0.60	2.79
9.90	20.00	0.22	0.58	2.60
10.00	20.00	0.21	0.56	2.38
10.10	20.00	0.20	0.54	2.18
10.20	20.00	0.20	0.53	2.12
10.30	20.00	0.20	0.42	1.66
10.40	20.00	0.20	0.33	1.33
10.50	20.00	0.20	0.36	1.44
10.60	20.00	0.20	0.31	1.23
10.70	20.00	0.20	0.36	1.45
10.80	20.00	0.20	0.35	1.40
10.90	20.00	0.20	0.32	1.28
11.00	20.00	0.20	0.29	1.15
11.10	20.00	0.20	0.28	1.12
11.20	20.00	0.19	0.27	1.02
11.30	20.00	0.18	0.26	0.94
11.40	20.00	0.17	0.26	0.89
11.50	20.00	0.16	0.25	0.82
11.60	20.00	0.16	0.24	0.76
11.70	20.00	0.15	0.24	0.71
11.80	20.00	0.14	0.23	0.67
11.90	20.00	0.14	0.22	0.62
12.00	20.00	0.13	0.22	0.58
12.10	20.00	0.13	0.21	0.55
12.20	20.00	0.13	0.21	0.55
12.30	20.00	0.13	0.21	0.53
12.40	20.00	0.12	0.20	0.49
12.50	20.00	0.12	0.20	0.48
12.60	20.00	0.12	0.20	0.47
12.70	20.00	0.11	0.19	0.39
12.80	20.00	0.10	0.18	0.37
12.90	20.00	0.11	0.19	0.42
13.00	20.00	0.10	0.18	0.39
13.10	20.00	0.10	0.17	0.34
13.20	20.00	0.09	0.17	0.33
13.30	20.00	0.09	0.17	0.32
13.40	20.00	0.09	0.17	0.31
13.50	20.00	0.09	0.17	0.30
13.60	20.00	0.09	0.16	0.29
13.70	20.00	0.09	0.16	0.29

13.80	20.00	0.09	0.16	0.28
13.90	20.00	0.09	0.16	0.28
14.00	20.00	0.08	0.16	0.27
14.10	20.00	0.08	0.16	0.26
14.20	20.00	0.08	0.15	0.25
14.30	20.00	0.08	0.15	0.23
14.40	20.00	0.08	0.15	0.23
14.50	20.00	0.07	0.15	0.22
14.60	20.00	0.07	0.15	0.21
14.70	20.00	0.07	0.14	0.20
14.80	20.00	0.07	0.14	0.19
14.90	20.00	0.07	0.14	0.19
15.00	20.00	0.07	0.14	0.18
15.10	20.00	0.06	0.13	0.17
15.20	20.00	0.06	0.13	0.16
15.30	20.00	0.06	0.13	0.15
15.40	20.00	0.06	0.13	0.15
15.50	20.00	0.06	0.12	0.14
15.60	20.00	0.06	0.12	0.13
15.70	20.00	0.05	0.12	0.13
15.80	20.00	0.05	0.12	0.12
15.90	20.00	0.05	0.04	0.04
16.00	20.00	0.05	0.11	0.11

THE MAXIMUM DISCHARGE FROM CROSS SECTION 3 IS:
572.19 CFS AT TIME: 4.55 HOURS
THE TOTAL VOLUME OF DISCHARGE IS: 32.59 AF

HYDROGRAPH AND AVERAGE FLOODPLAIN HYDRAULICS FOR CROSS SECTION NO: 3

TIME (HRS)	TOPWID (FT)	DEPTH (FT)	VELOCITY (FPS)	DISCHARGE (CFS)
3.80	300.00	0.08	0.08	1.96
3.90	240.00	0.14	0.18	6.05
4.00	340.00	0.12	0.20	8.11
4.10	260.00	0.10	0.10	2.58
4.20	240.00	0.11	0.13	3.37
4.30	240.00	0.19	0.34	15.16
4.40	300.00	0.55	1.35	223.84
4.50	380.00	0.77	1.90	553.48
4.60	380.00	0.77	1.91	557.89
4.70	380.00	0.71	1.79	484.36
4.80	380.00	0.65	1.65	405.52
4.90	340.00	0.65	1.54	337.86
5.00	380.00	0.54	1.42	289.58
5.10	340.00	0.54	1.33	244.22
5.20	320.00	0.52	1.21	200.76
5.30	300.00	0.50	1.08	162.35
5.40	320.00	0.40	0.96	123.39
5.50	300.00	0.37	0.86	96.28
5.60	300.00	0.32	0.74	70.95
5.70	240.00	0.32	0.63	48.75
5.80	240.00	0.28	0.55	36.47
5.90	240.00	0.24	0.45	26.05
6.00	220.00	0.22	0.40	18.93
6.10	220.00	0.18	0.34	13.62
6.20	160.00	0.21	0.29	9.50
6.30	180.00	0.16	0.22	6.39
6.40	120.00	0.16	0.21	3.99
6.50	100.00	0.15	0.17	2.65
6.60	40.00	0.23	0.14	1.30
6.70	60.00	0.14	0.10	0.78
6.80	40.00	0.16	0.09	0.57
6.90	40.00	0.15	0.06	0.37
7.00	20.00	0.18	0.08	0.30
7.10	20.00	0.15	0.07	0.23
7.20	20.00	0.13	0.07	0.17
7.30	20.00	0.10	0.06	0.12
7.40	20.00	0.08	0.05	0.08
7.50	20.00	0.06	0.04	0.05
7.60	20.00	0.05	0.02	0.02

THE MAXIMUM DISCHARGE FROM CROSS SECTION 6 IS:
1251.51 CFS AT TIME: 4.42 HOURS
THE TOTAL VOLUME OF DISCHARGE IS: 143.95 AF

HYDROGRAPH AND AVERAGE FLOODPLAIN HYDRAULICS FOR CROSS SECTION NO: 6

TIME (HRS)	TOPWID (FT)	DEPTH (FT)	VELOCITY (FPS)	DISCHARGE (CFS)
1.40	40.00	0.07	0.21	0.59
1.50	40.00	0.11	0.51	2.27
1.60	40.00	0.12	0.54	2.61
1.70	40.00	0.13	0.55	2.85
1.80	40.00	0.13	0.56	2.95
1.90	40.00	0.14	0.57	3.10
2.00	40.00	0.14	0.59	3.29
2.10	40.00	0.15	0.60	3.52
2.20	40.00	0.15	0.61	3.71
2.30	40.00	0.15	0.62	3.83
2.40	40.00	0.16	0.63	4.02
2.50	40.00	0.16	0.64	4.18
2.60	40.00	0.17	0.65	4.39
2.70	40.00	0.18	0.67	4.72
2.80	40.00	0.19	0.70	5.19
2.90	40.00	0.20	0.72	5.70
3.00	40.00	0.22	0.76	6.56
3.10	40.00	0.27	1.00	10.56
3.20	40.00	0.39	1.30	20.20
3.30	40.00	0.44	1.46	25.52
3.40	40.00	0.48	1.59	30.32
3.50	40.00	0.50	1.69	33.97
3.60	40.00	0.55	1.87	41.23
3.70	40.00	0.69	2.51	69.55
3.80	120.00	0.55	3.13	206.95
3.90	140.00	0.69	3.75	363.49
4.00	120.00	1.06	4.78	608.08
4.10	120.00	1.21	5.27	767.60
4.20	140.00	1.37	5.21	995.12
4.30	140.00	1.41	5.34	1056.41
4.40	140.00	1.60	5.53	1235.54
4.50	140.00	1.57	5.45	1198.32
4.60	140.00	1.46	5.27	1078.59
4.70	140.00	1.33	5.08	945.57
4.80	140.00	1.22	5.02	854.97
4.90	120.00	1.27	5.14	782.60
5.00	100.00	1.40	5.12	718.04
5.10	100.00	1.27	4.94	626.00
5.20	60.00	1.88	4.66	525.97
5.30	60.00	1.70	4.30	440.05
5.40	60.00	1.55	4.06	378.58
5.50	60.00	1.42	3.84	326.95
5.60	60.00	1.29	3.65	282.22
5.70	60.00	1.18	3.51	247.17

5.80	60.00	1.07	3.36	216.01
5.90	60.00	1.00	3.19	191.48
6.00	60.00	0.91	3.13	170.93
6.10	60.00	0.84	3.03	153.54
6.20	40.00	1.17	2.97	139.24
6.30	40.00	1.11	2.85	126.93
6.40	40.00	1.05	2.76	116.20
6.50	40.00	1.00	2.68	107.13
6.60	40.00	0.94	2.60	98.18
6.70	40.00	0.90	2.54	91.55
6.80	40.00	0.86	2.48	85.28
6.90	40.00	0.83	2.40	79.28
7.00	40.00	0.79	2.32	73.58
7.10	40.00	0.73	2.29	67.19
7.20	40.00	0.70	2.27	63.42
7.30	40.00	0.67	2.23	60.18
7.40	40.00	0.66	2.17	57.37
7.50	40.00	0.65	2.11	54.61
7.60	40.00	0.64	2.06	52.49
7.70	40.00	0.62	2.00	49.38
7.80	40.00	0.60	1.94	46.20
7.90	40.00	0.58	1.86	42.90
8.00	40.00	0.56	1.82	40.71
8.10	40.00	0.55	1.77	38.54
8.20	40.00	0.53	1.75	37.29
8.30	40.00	0.52	1.68	34.88
8.40	40.00	0.50	1.66	33.38
8.50	40.00	0.49	1.63	32.08
8.60	40.00	0.48	1.60	30.76
8.70	40.00	0.47	1.57	29.61
8.80	40.00	0.46	1.55	28.80
8.90	40.00	0.46	1.52	27.60
9.00	40.00	0.45	1.47	26.45
9.10	40.00	0.44	1.47	25.96
9.20	40.00	0.43	1.45	25.16
9.30	40.00	0.43	1.42	24.41
9.40	40.00	0.42	1.42	24.09
9.50	40.00	0.42	1.40	23.51
9.60	40.00	0.41	1.37	22.70
9.70	40.00	0.41	1.36	22.33
9.80	40.00	0.41	1.35	22.02
9.90	40.00	0.40	1.33	21.29
10.00	40.00	0.40	1.32	20.86
10.10	40.00	0.39	1.29	20.15
10.20	40.00	0.38	1.28	19.60
10.30	40.00	0.38	1.27	19.19
10.40	40.00	0.37	1.24	18.52
10.50	40.00	0.37	1.24	18.22
10.60	40.00	0.36	1.22	17.76
10.70	40.00	0.36	1.21	17.28
10.80	40.00	0.35	1.19	16.92
10.90	40.00	0.35	1.20	16.81
11.00	40.00	0.35	1.17	16.34
11.10	40.00	0.34	1.16	16.00
11.20	40.00	0.34	1.16	15.86
11.30	40.00	0.34	1.16	15.66

11.40	40.00	0.34	1.16	15.57
11.50	40.00	0.33	1.14	15.26
11.60	40.00	0.33	1.13	14.94
11.70	40.00	0.33	1.12	14.65
11.80	40.00	0.32	1.11	14.44
11.90	40.00	0.32	1.10	14.21
12.00	40.00	0.32	1.10	14.08
12.10	40.00	0.32	1.09	13.70
12.20	40.00	0.31	1.08	13.42
12.30	40.00	0.31	1.06	13.02
12.40	40.00	0.30	1.05	12.69
12.50	40.00	0.30	1.04	12.44
12.60	40.00	0.30	1.03	12.24
12.70	40.00	0.29	1.03	12.11
12.80	40.00	0.29	1.03	12.00
12.90	40.00	0.29	1.03	11.91
13.00	40.00	0.29	1.01	11.67
13.10	40.00	0.29	1.01	11.61
13.20	40.00	0.28	1.00	11.38
13.30	40.00	0.28	1.00	11.28
13.40	40.00	0.28	0.99	11.04
13.50	40.00	0.28	0.99	10.94
13.60	40.00	0.28	0.97	10.72
13.70	40.00	0.27	0.96	10.44
13.80	40.00	0.27	0.95	10.16
13.90	40.00	0.26	0.94	9.79
14.00	40.00	0.26	0.94	9.67
14.10	40.00	0.26	0.92	9.43
14.20	40.00	0.25	0.91	9.27
14.30	40.00	0.25	0.90	9.04
14.40	40.00	0.25	0.88	8.84
14.50	40.00	0.25	0.88	8.76
14.60	40.00	0.25	0.87	8.62
14.70	40.00	0.25	0.86	8.52
14.80	40.00	0.24	0.86	8.44
14.90	40.00	0.24	0.86	8.37
15.00	40.00	0.24	0.86	8.32
15.10	40.00	0.24	0.85	8.24
15.20	40.00	0.24	0.85	8.18
15.30	40.00	0.24	0.85	8.13
15.40	40.00	0.24	0.85	8.08
15.50	40.00	0.24	0.84	8.00
15.60	40.00	0.24	0.84	7.99
15.70	40.00	0.24	0.84	8.00
15.80	40.00	0.24	0.84	8.00
15.90	40.00	0.24	0.84	7.99
16.00	40.00	0.24	0.84	7.96

Job No.

No.

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	1	Of	4

100-YR 24-HR Hydrograph Data

Reference: HYCROSSOUT24hr.doc

Revised Carefree Floodplain Cross Sections for Cave Creek Hydrology-04-26-2007

Cross Section 1

Q 100=139.29 cfs at 4.52 hours where Volume=10.09 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0.00	20	0.54	0	0
0.10	20	0.54	0	0
0.20	20	0.54	0	0
0.30	20	0.54	0	0
0.40	20	0.54	0	0
0.50	20	0.54	0	0
0.60	20	0.54	0	0
0.70	20	0.54	0	0
0.80	20	0.54	0	0
0.90	20	0.54	0	0
1.00	20	0.54	0	0
1.10	20	0.54	0	0
1.20	20	0.54	0	0
1.30	20	0.54	0	0
1.40	20	0.54	0	0
1.50	20	0.54	0	0
1.60	20	0.54	0	0
1.70	20	0.54	0	0
1.80	20	0.54	0	0
1.90	20	0.54	0	0
2.00	20	0.54	0	0
2.10	20	0.54	0	0
2.20	20	0.54	0	0
2.30	20	0.54	0	0
2.40	20	0.54	0	0
2.50	20	0.54	0	0
2.60	20	0.54	0	0
2.70	20	0.54	0	0
2.80	20	0.54	0	0
2.90	20	0.54	0	0
3.00	20	0.54	0	0
3.10	20	0.54	0	0
3.20	20	0.54	0	0

Cross Section 2

Q 100=212.13 cfs at 4.57 hours where Volume=23.19 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0.00	20	0.05	0.06	0
0.10	20	0.05	0.06	0
0.20	20	0.05	0.06	0
0.30	20	0.05	0.06	0
0.40	20	0.05	0.06	0
0.50	20	0.05	0.06	0
0.60	20	0.05	0.06	0
0.70	20	0.05	0.06	0
0.80	20	0.05	0.06	0
0.90	20	0.05	0.06	0
1.00	20	0.05	0.06	0
1.10	20	0.05	0.06	0
1.20	20	0.05	0.06	0
1.30	20	0.05	0.06	0
1.40	20	0.05	0.06	0
1.50	20	0.05	0.06	0
1.60	20	0.05	0.06	0
1.70	20	0.05	0.06	0
1.80	20	0.05	0.06	0
1.90	20	0.05	0.06	0
2.00	20	0.05	0.06	0
2.10	20	0.05	0.06	0
2.20	20	0.05	0.06	0
2.30	20	0.05	0.06	0
2.40	20	0.05	0.06	0
2.50	20	0.05	0.06	0
2.60	20	0.05	0.06	0
2.70	20	0.05	0.06	0
2.80	20	0.05	0.06	0
2.90	20	0.05	0.06	0
3.00	20	0.05	0.06	0
3.10	20	0.05	0.06	0
3.20	20	0.05	0.06	0

Cross Section 1

Q 100=139.29 cfs at 4.52 hours where Volume=10.09 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.30	20	0.54	0	0
3.40	20	0.54	0	0
3.50	20	0.54	0	0
3.60	20	0.54	0	0
3.70	60	0.08	0.02	0.11
3.80	80	0.11	0.06	0.54
3.90	80	0.19	0.01	0.19
4.00	80	0.24	0.05	0.97
4.10	40	0.52	0.18	3.87
4.20	40	0.63	0.51	12.86
4.30	40	0.7	0.52	14.67
4.40	60	0.67	0.96	38.36
4.50	60	1	2.26	135.07
4.60	60	0.99	2.24	133.84
4.70	60	0.95	2.15	122.69
4.80	60	0.94	1.93	108.38
4.90	60	0.88	1.69	89.06
5.00	60	0.86	1.6	82.41
5.10	60	0.83	1.41	70.1
5.20	60	0.79	1.3	62.16
5.30	60	0.79	1.14	53.79
5.40	60	0.75	1.02	46.04
5.50	60	0.67	0.93	37.29
5.60	60	0.64	0.88	33.93
5.70	40	0.79	0.88	28
5.80	60	0.52	0.66	20.54
5.90	40	0.72	0.55	15.84
6.00	40	0.64	0.47	12.15
6.10	40	0.59	0.27	6.43
6.20	40	0.54	0.18	3.75
6.30	40	0.5	0.12	2.44
6.40	40	0.65	0.52	13.44
6.50	40	0.63	0.46	11.79
6.60	40	0.58	0.41	9.45
6.70	40	0.59	0.49	11.53
6.80	40	0.57	0.25	5.71
6.90	40	0.54	0.19	4.22
7.00	60	0.37	0.16	3.59
7.10	40	0.52	0.14	3
7.20	40	0.5	0.12	2.41
7.30	40	0.48	0.1	1.97
7.40	40	0.47	0.09	1.59
7.50	40	0.45	0.07	1.31
7.60	40	0.44	0.06	1.14
7.70	40	0.43	0.06	1.03
7.80	40	0.43	0.06	1.04
7.90	40	0.43	0.06	1
8.00	40	0.41	0.05	0.82
8.10	40	0.41	0.05	0.78
8.20	40	0.42	0.03	0.43
8.30	40	0.42	0.02	0.4
8.40	20	0.76	0.02	0.3
8.50	20	0.73	0.02	0.24

Cross Section 2

Q 100=212.13 cfs at 4.57 hours where Volume=23.19 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.30	20	0.05	0.06	0
3.40	20	0.05	0.06	0
3.50	20	0.05	0.06	0
3.60	20	0.05	0.06	0
3.70	20	0.05	0.06	0.06
3.80	80	0.05	0.05	0.21
3.90	80	0.12	0.53	4.92
4.00	80	0.2	1	15.82
4.10	60	0.39	1.81	42.09
4.20	60	0.5	2.26	68.3
4.30	60	0.52	2.24	70.34
4.40	60	0.63	2.2	82.67
4.50	80	0.84	2.96	198.46
4.60	80	0.86	3.05	208.82
4.70	80	0.82	2.95	193.16
4.80	60	0.98	2.82	164.98
4.90	80	0.68	2.62	143.11
5.00	60	0.79	2.49	117.68
5.10	60	0.74	2.41	107.17
5.20	60	0.7	2.37	99.98
5.30	80	0.51	2.25	91.35
5.40	60	0.65	2.27	87.97
5.50	80	0.49	2.14	83.27
5.60	60	0.62	2.17	80.93
5.70	60	0.59	2.14	76.24
5.80	60	0.58	2.13	74.23
5.90	60	0.55	2.15	70.99
6.00	60	0.52	2.15	67.18
6.10	60	0.5	2.12	63.35
6.20	60	0.48	2.11	60.23
6.30	60	0.45	2.05	55.6
6.40	60	0.37	1.68	37.08
6.50	60	0.36	1.61	34.4
6.60	60	0.34	1.51	30.86
6.70	60	0.32	1.42	27.52
6.80	60	0.31	1.34	25.07
6.90	60	0.3	1.31	23.88
7.00	40	0.41	1.33	21.83
7.10	40	0.39	1.27	19.98
7.20	60	0.27	1.15	18.41
7.30	40	0.36	1.17	16.76
7.40	40	0.34	1.11	15.18
7.50	40	0.32	1.05	13.65
7.60	40	0.31	1.02	12.63
7.70	60	0.22	0.91	11.77
7.80	40	0.28	0.94	10.72
7.90	40	0.27	0.87	9.53
8.00	40	0.26	0.83	8.73
8.10	20	0.45	0.89	8.01
8.20	20	0.43	0.86	7.35
8.30	20	0.4	0.83	6.7
8.40	20	0.39	0.82	6.45
8.50	20	0.37	0.79	5.83

Cross Section 1
Q 100=139.29 cfs at 4.52 hours where Volume=10.09 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
8.60	20	0.71	0.01	0.2
8.70	40	0.37	0.02	0.22
8.80	20	0.67	0.01	0.13
8.90	20	0.66	0.01	0.11
9.00	20	0.64	0.01	0.09
9.10	20	0.62	0.01	0.07
9.20	20	0.6	0	0.04
9.30	20	0.58	0	0.03
9.40	20	0.56	0	0.02
9.50	20	0.55	0	0.01
9.60	20	0.55	0	0.01
9.70	20	0.54	0	0.01
9.80	20	0.54	0	0
9.90	20	0.54	0	0
10.10	20	0.54	0	0
10.20	20	0.54	0	0
10.30	20	0.05	0.01	0.01
10.60	20	0.54	0	0
10.70	20	0.54	0	0
10.80	20	0.54	0	0
10.90	20	0.54	0	0
11.00	20	0.54	0	0
11.50	20	0.54	0	0
11.60	20	0.54	0	0
11.70	20	0.54	0	0
12.00	20	0.54	0	0
12.60	20	0.54	0	0
13.10	20	0.54	0	0
13.70	20	0.05	0.03	0.03
14.80	20	0.54	0	0
15.00	20	0.54	0	0
15.60	20	0.54	0	0

Cross Section 2
Q 100=212.13 cfs at 4.57 hours where Volume=23.19 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
8.60	20	0.36	0.78	5.52
8.70	20	0.35	0.77	5.36
8.80	40	0.19	0.66	5.1
8.90	20	0.33	0.74	4.86
9.00	20	0.31	0.71	4.44
9.10	20	0.29	0.69	4.07
9.20	20	0.29	0.68	3.9
9.30	20	0.28	0.67	3.73
9.40	20	0.26	0.65	3.42
9.50	20	0.25	0.63	3.17
9.60	20	0.25	0.62	3.03
9.70	20	0.24	0.61	2.93
9.80	20	0.23	0.6	2.79
9.90	20	0.22	0.58	2.6
10.00	20	0.21	0.56	2.38
10.10	20	0.2	0.54	2.18
10.20	20	0.2	0.53	2.12
10.30	20	0.2	0.42	1.66
10.40	20	0.2	0.33	1.33
10.50	20	0.2	0.36	1.44
10.60	20	0.2	0.31	1.23
10.70	20	0.2	0.36	1.45
10.80	20	0.2	0.35	1.4
10.90	20	0.2	0.32	1.28
11.00	20	0.2	0.29	1.15
11.10	20	0.2	0.28	1.12
11.20	20	0.19	0.27	1.02
11.30	20	0.18	0.26	0.94
11.40	20	0.17	0.26	0.89
11.50	20	0.16	0.25	0.82
11.60	20	0.16	0.24	0.76
11.70	20	0.15	0.24	0.71
11.8	20	0.14	0.23	0.67
11.9	20	0.14	0.22	0.62
12	20	0.13	0.22	0.58
12.1	20	0.13	0.21	0.55
12.2	20	0.13	0.21	0.55
12.3	20	0.13	0.21	0.53
12.4	20	0.12	0.2	0.49
12.5	20	0.12	0.2	0.48
12.6	20	0.12	0.2	0.47
12.7	20	0.11	0.19	0.39
12.8	20	0.1	0.18	0.37
12.9	20	0.11	0.19	0.42
13	20	0.1	0.18	0.39
13.1	20	0.1	0.17	0.34
13.2	20	0.09	0.17	0.33
13.3	20	0.09	0.17	0.32
13.4	20	0.09	0.17	0.31
13.5	20	0.09	0.17	0.3
13.6	20	0.09	0.16	0.29
13.7	20	0.09	0.16	0.29
13.8	20	0.09	0.16	0.28

Cross Section 1

Q 100=139.29 cfs at 4.52 hours where Volume=10.09 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)

Cross Section 2

Q 100=212.13 cfs at 4.57 hours where Volume=23.19 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
13.9	20	0.09	0.16	0.28
14	20	0.08	0.16	0.27
14.1	20	0.08	0.16	0.26
14.2	20	0.08	0.15	0.25
14.3	20	0.08	0.15	0.23
14.4	20	0.08	0.15	0.23
14.5	20	0.07	0.15	0.22
14.6	20	0.07	0.15	0.21
14.7	20	0.07	0.14	0.2
14.8	20	0.07	0.14	0.19
14.9	20	0.07	0.14	0.19
15	20	0.07	0.14	0.18
15.1	20	0.06	0.13	0.17
15.2	20	0.06	0.13	0.16
15.3	20	0.06	0.13	0.15
15.4	20	0.06	0.13	0.15
15.5	20	0.06	0.12	0.14
15.6	20	0.06	0.12	0.13
15.7	20	0.05	0.12	0.13
15.8	20	0.05	0.12	0.12
15.9	20	0.05	0.04	0.04
16	20	0.05	0.11	0.11

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	3	Of	4

Cross Section 3
Q 100=572.19 cfs at 4.55 hours where Volume=32.59 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0	20	0.04	0	0
0.1	20	0.04	0	0
0.2	20	0.04	0	0
0.3	20	0.04	0	0
0.4	20	0.04	0	0
0.5	20	0.04	0	0
0.6	20	0.04	0	0
0.7	20	0.04	0	0
0.8	20	0.04	0	0
0.9	20	0.04	0	0
1	20	0.04	0	0
1.1	20	0.04	0	0
1.2	20	0.04	0	0
1.3	20	0.04	0	0
1.4	20	0.04	0	0
1.5	20	0.04	0	0
1.6	20	0.04	0	0
1.7	20	0.04	0	0
1.8	20	0.04	0	0
1.9	20	0.04	0	0
2	20	0.04	0	0
2.1	20	0.04	0	0
2.2	20	0.04	0	0
2.3	20	0.04	0	0
2.4	20	0.04	0	0
2.5	20	0.04	0	0
2.6	20	0.04	0	0
2.7	20	0.04	0	0
2.8	20	0.04	0	0
2.9	20	0.04	0	0
3	20	0.04	0	0
3.1	20	0.04	0	0
3.2	20	0.04	0	0

Cross Section 4
Q 100=40.47 cfs at 4.12 hours where Volume=3.84 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0	60	1.39	0	0
0.1	60	1.39	0	0
0.2	60	1.39	0	0
0.3	60	1.39	0	0
0.4	60	1.39	0	0
0.5	60	1.39	0	0
0.6	60	1.39	0	0
0.7	60	1.39	0	0
0.8	60	1.39	0	0
0.9	60	1.39	0	0
1	60	1.39	0	0
1.1	60	1.39	0	0
1.2	60	1.39	0	0
1.3	60	1.39	0	0
1.4	60	1.39	0	0
1.5	60	1.39	0	0
1.6	60	1.39	0	0
1.7	60	1.39	0	0
1.8	60	1.39	0	0
1.9	60	1.39	0	0
2	60	1.39	0	0
2.1	60	1.39	0	0
2.2	60	1.39	0	0
2.3	60	1.39	0	0
2.4	60	1.39	0	0
2.5	60	1.39	0	0
2.6	60	1.39	0	0
2.7	60	1.39	0	0
2.8	60	1.39	0	0
2.9	60	1.39	0	0
3	60	1.39	0	0
3.1	60	1.39	0	0
3.2	60	1.39	0	0

Cross Section 3

Q 100=572.19 cfs at 4.55 hours where Volume=32.59 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.3	20	0.04	0	0
3.4	20	0.04	0	0
3.5	20	0.04	0	0
3.6	20	0.04	0	0
3.7	20	0.04	0	0
3.8	300	0.08	0.08	1.96
3.9	240	0.14	0.18	6.05
4	340	0.12	0.2	8.11
4.1	260	0.1	0.1	2.58
4.2	240	0.11	0.13	3.37
4.3	240	0.19	0.34	15.16
4.4	300	0.55	1.35	223.84
4.5	380	0.77	1.9	553.48
4.6	380	0.77	1.91	557.89
4.7	380	0.71	1.79	484.36
4.8	380	0.65	1.65	405.52
4.9	340	0.65	1.54	337.86
5	380	0.54	1.42	289.58
5.1	340	0.54	1.33	244.22
5.2	320	0.52	1.21	200.76
5.3	300	0.5	1.08	162.35
5.4	320	0.4	0.96	123.39
5.5	300	0.37	0.86	96.28
5.6	300	0.32	0.74	70.95
5.7	240	0.32	0.63	48.75
5.8	240	0.28	0.55	36.47
5.9	240	0.24	0.45	26.05
6	220	0.22	0.4	18.93
6.1	220	0.18	0.34	13.62
6.2	160	0.21	0.29	9.5
6.3	180	0.16	0.22	6.39
6.4	120	0.16	0.21	3.99
6.5	100	0.15	0.17	2.65
6.6	40	0.23	0.14	1.3
6.7	60	0.14	0.1	0.78
6.8	40	0.16	0.09	0.57
6.9	40	0.15	0.06	0.37
7	20	0.18	0.08	0.3
7.1	20	0.15	0.07	0.23
7.2	20	0.13	0.07	0.17
7.3	20	0.1	0.06	0.12
7.4	20	0.08	0.05	0.08
7.5	20	0.06	0.04	0.05
7.6	20	0.05	0.02	0.02

Cross Section 4

Q 100=40.47 cfs at 4.12 hours where Volume=3.84 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.3	60	1.39	0	0
3.4	60	1.39	0	0
3.5	60	1.39	0	0
3.6	60	1.39	0	0.03
3.7	20	0.23	0.09	0.42
3.8	80	0.28	0.09	2.14
3.9	120	0.63	0.05	3.72
4	120	1.14	0.2	27.05
4.1	100	1.54	0.25	38.79
4.2	80	1.86	0.21	31.42
4.3	80	1.76	0.16	21.96
4.4	80	1.73	0.14	18.77
4.5	80	1.69	0.12	16.5
4.6	80	1.64	0.1	13.52
4.7	80	1.62	0.09	11.9
4.8	80	1.61	0.11	13.8
4.9	80	1.73	0.21	29.4
5	80	1.75	0.21	29.93
5.1	80	1.73	0.19	26.63
5.2	80	1.69	0.17	23.02
5.3	80	1.66	0.15	19.99
5.4	80	1.63	0.13	16.56
5.5	80	1.6	0.11	14.09
5.6	80	1.56	0.1	12.26
5.7	60	2.03	0.09	10.62
5.8	60	1.99	0.08	9.3
5.9	60	1.95	0.07	8.1
6	60	1.92	0.06	6.6
6.1	60	1.89	0.05	5.39
6.2	80	1.43	0.04	5.04
6.3	60	1.88	0.04	4.52
6.4	60	1.86	0.04	3.98
6.5	60	1.85	0.03	3.25
6.6	60	1.84	0.02	2.75
6.7	60	1.83	0.02	2.59
6.8	40	2.47	0.03	2.69
6.9	60	1.8	0.02	1.86
7	60	1.78	0.01	0.87
7.1	60	1.76	0.01	1.28
7.2	60	1.74	0.02	1.59
7.3	60	1.73	0.01	0.92
7.4	60	1.72	0.02	2.07
7.5	60	1.7	0.01	0.91
7.6	60	1.69	0.02	1.76
7.7	60	1.68	0.01	1.47
7.8	60	1.67	0.01	0.89
7.9	60	1.66	0.01	0.8
8	60	1.66	0	0.2
8.1	60	1.65	0.01	0.56
8.2	60	1.64	0	0.13
8.3	60	1.63	0	0.41
8.4	60	1.63	0	0.42
8.5	40	2.28	0	0.27

Cross Section 3

Q 100=572.19 cfs at 4.55 hours where Volume=32.59 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)

Cross Section 4

Q 100=40.47 cfs at 4.12 hours where Volume=3.84 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
8.6	60	1.61	0	0.27
8.7	60	1.61	0	0.24
8.8	60	1.6	0.01	0.61
8.9	60	1.6	0.01	0.71
9	40	2.25	0.01	0.48
9.1	60	1.59	0	0.34
9.2	60	1.58	0	0.37
9.3	60	1.58	0	0.29
9.4	60	1.57	0	0.47
9.5	60	1.57	0	0.44
9.6	60	1.56	0	0.43
9.7	60	1.56	0	0.42
9.8	60	1.56	0	0.42
9.9	60	1.56	0.01	0.47
10	40	2.21	0	0.34
10.1	40	2.21	0	0.04
10.2	60	1.55	0	0.07
10.3	40	2.21	0	0.11
10.4	60	1.54	0	0.15
10.5	60	1.54	0	0.27
10.6	60	1.54	0	0.35
10.7	40	2.19	0	0.34
10.8	60	1.53	0	0.13
10.9	60	1.53	0	0.21
11	60	1.53	0	0.1
11.1	60	1.52	0	0.25
11.2	60	1.52	0	0.04
11.3	60	1.52	0	0.19
11.4	60	1.52	0	0.1
11.5	60	1.52	0	0.24
11.6	60	1.52	0	0.1
11.7	60	1.51	0	0.18
11.8	60	1.51	0	0.21
11.9	60	1.51	0	0.14
12	60	1.51	0	0.18
12.1	60	1.51	0	0.17
12.2	60	1.5	0	0.09
12.3	60	1.5	0	0.09
12.4	60	1.5	0	0.1
12.5	60	1.49	0	0.07
12.6	60	1.49	0	0.05
12.7	60	1.48	0	0.06
12.8	60	1.48	0	0.07
12.9	60	1.48	0	0.08
13	60	1.47	0	0.09
13.1	60	1.47	0	0.06
13.2	60	1.46	0	0.07
13.3	60	1.46	0	0.04
13.4	60	1.46	0	0.03
13.5	60	1.45	0	0.05
13.6	60	1.45	0	0.04
13.7	60	1.45	0	0.02
13.8	60	1.44	0	0.02

Cross Section 3				
Q 100=572.19 cfs at 4.55 hours where Volume=32.59 AF				
Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)

Cross Section 4				
Q 100=40.47 cfs at 4.12 hours where Volume=3.84 AF				
Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
13.9	60	1.44	0	0.02
14	60	1.44	0	0.05
14.1	60	1.43	0	0.03
14.2	60	1.43	0	0.06
14.3	60	1.43	0	0.04
14.4	60	1.43	0	0.05
14.5	60	1.42	0	0.04
14.6	60	1.42	0	0.02
14.7	60	1.42	0	0.04
14.8	60	1.42	0	0.01
14.9	60	1.41	0	0.05
15	60	1.41	0	0.02
15.1	60	1.41	0	0.02
15.2	60	1.41	0	0.04
15.3	60	1.4	0	0.02
15.4	60	1.4	0	0.02
15.5	60	1.4	0	0.03
15.6	60	1.4	0	0.03
15.7	60	1.4	0	0.03
15.8	60	1.39	0	0.04
15.9	60	1.39	0	0.03
16	60	1.39	0	0.03

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	3	Of	4

Cross Section 5
Q 100=4.25 cfs at 4.24 hours where Volume=0.26 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0	20	1.81	0	0
0.1	20	1.81	0	0
0.2	20	1.81	0	0
0.3	20	1.81	0	0
0.4	20	1.81	0	0
0.5	20	1.81	0	0
0.6	20	1.81	0	0
0.7	20	1.81	0	0
0.8	20	1.81	0	0
0.9	20	1.81	0	0
1	20	1.81	0	0
1.1	20	1.81	0	0
1.2	20	1.81	0	0
1.3	20	1.81	0	0
1.4	20	1.81	0	0
1.5	20	1.81	0	0
1.6	20	1.81	0	0
1.7	20	1.81	0	0
1.8	20	1.81	0	0
1.9	20	1.81	0	0
2	20	1.81	0	0
2.1	20	1.81	0	0
2.2	20	1.81	0	0
2.3	20	1.81	0	0
2.4	20	1.81	0	0
2.5	20	1.81	0	0
2.6	20	1.81	0	0
2.7	20	1.81	0	0
2.8	20	1.81	0	0
2.9	20	1.81	0	0
3	20	1.81	0	0
3.1	20	1.81	0	0
3.2	20	1.81	0	0

Cross Section 6
Q 100=1251.51 cfs at 4.42 hours where Volume=143.95 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
0	40	0.07	0.21	0
0.1	40	0.07	0.21	0
0.2	40	0.07	0.21	0
0.3	40	0.07	0.21	0
0.4	40	0.07	0.21	0
0.5	40	0.07	0.21	0
0.6	40	0.07	0.21	0
0.7	40	0.07	0.21	0
0.8	40	0.07	0.21	0
0.9	40	0.07	0.21	0
1	40	0.07	0.21	0
1.1	40	0.07	0.21	0
1.2	40	0.07	0.21	0
1.3	40	0.07	0.21	0
1.4	40	0.07	0.21	0.59
1.5	40	0.11	0.51	2.27
1.6	40	0.12	0.54	2.61
1.7	40	0.13	0.55	2.85
1.8	40	0.13	0.56	2.95
1.9	40	0.14	0.57	3.1
2	40	0.14	0.59	3.29
2.1	40	0.15	0.6	3.52
2.2	40	0.15	0.61	3.71
2.3	40	0.15	0.62	3.83
2.4	40	0.16	0.63	4.02
2.5	40	0.16	0.64	4.18
2.6	40	0.17	0.65	4.39
2.7	40	0.18	0.67	4.72
2.8	40	0.19	0.7	5.19
2.9	40	0.2	0.72	5.7
3	40	0.22	0.76	6.56
3.1	40	0.27	1	10.56
3.2	40	0.39	1.3	20.2

Cross Section 5

Q 100=4.25 cfs at 4.24 hours where Volume=0.26 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.3	20	1.81	0	0
3.4	20	1.81	0	0
3.5	20	1.81	0	0
3.6	20	1.81	0	0
3.7	20	0.05	0.04	0.04
3.8	80	0.12	0.07	0.67
3.9	80	0.36	0.05	1.31
4	100	0.55	0.03	1.84
4.1	80	0.82	0.04	2.83
4.2	60	1.21	0.05	3.37
4.3	60	1.25	0.05	3.6
4.4	60	1.23	0.04	2.91
4.5	60	1.21	0.03	2.42
4.6	60	1.19	0.02	1.43
4.7	60	1.16	0.03	1.76
4.8	60	1.14	0.02	1.17
4.9	60	1.12	0.01	1.01
5	60	1.11	0.01	0.85
5.1	60	1.1	0.01	0.8
5.2	60	1.08	0.01	0.67
5.3	60	1.08	0.01	0.48
5.4	60	1.07	0.01	0.47
5.5	60	1.06	0	0.29
5.6	60	1.05	0.01	0.36
5.7	60	1.04	0	0.25
5.8	60	1.03	0	0.16
5.9	60	1.03	0	0.22
6	60	1.02	0	0.21
6.1	60	1.02	0	0.11
6.2	60	1.02	0	0.09
6.3	60	1.01	0	0.13
6.4	60	1.01	0	0.07
6.5	60	1.01	0	0.07
6.6	60	1	0	0.15
6.7	40	1.48	0	0.03
6.8	60	1	0	0.03
6.9	60	0.99	0	0.1
7	60	0.99	0	0.05
7.1	60	0.99	0	0.11
7.2	40	1.45	0	0.03
7.3	60	0.98	0	0.05
7.4	20	1.94	0	0.01
7.5	40	1.43	0	0.04
7.6	40	1.43	0	0.02
7.7	40	1.42	0	0.05
7.8	40	1.42	0	0.03
7.9	40	1.41	0	0.02
8	40	1.41	0	0.01
8.1	40	1.4	0	0.06
8.2	40	1.4	0	0.01
8.3	20	1.9	0	0.01
8.4	40	1.39	0	0.01
8.5	40	1.39	0	0.01

Cross Section 6

Q 100=1251.51 cfs at 4.42 hours where Volume=143.95 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
3.3	40	0.44	1.46	25.52
3.4	40	0.48	1.59	30.32
3.5	40	0.5	1.69	33.97
3.6	40	0.55	1.87	41.23
3.7	40	0.69	2.51	69.55
3.8	120	0.55	3.13	206.95
3.9	140	0.69	3.75	363.49
4	120	1.06	4.78	608.08
4.1	120	1.21	5.27	767.6
4.2	140	1.37	5.21	995.12
4.3	140	1.41	5.34	1056.41
4.4	140	1.6	5.53	1235.54
4.5	140	1.57	5.45	1198.32
4.6	140	1.46	5.27	1078.59
4.7	140	1.33	5.08	945.57
4.8	140	1.22	5.02	854.97
4.9	120	1.27	5.14	782.6
5	100	1.4	5.12	718.04
5.1	100	1.27	4.94	626
5.2	60	1.88	4.66	525.97
5.3	60	1.7	4.3	440.05
5.4	60	1.55	4.06	378.58
5.5	60	1.42	3.84	326.95
5.6	60	1.29	3.65	282.22
5.7	60	1.18	3.51	247.17
5.8	60	1.07	3.36	216.01
5.9	60	1	3.19	191.48
6	60	0.91	3.13	170.93
6.1	60	0.84	3.03	153.54
6.2	40	1.17	2.97	139.24
6.3	40	1.11	2.85	126.93
6.4	40	1.05	2.76	116.2
6.5	40	1	2.68	107.13
6.6	40	0.94	2.6	98.18
6.7	40	0.9	2.54	91.55
6.8	40	0.86	2.48	85.28
6.9	40	0.83	2.4	79.28
7	40	0.79	2.32	73.58
7.1	40	0.73	2.29	67.19
7.2	40	0.7	2.27	63.42
7.3	40	0.67	2.23	60.18
7.4	40	0.66	2.17	57.37
7.5	40	0.65	2.11	54.61
7.6	40	0.64	2.06	52.49
7.7	40	0.62	2	49.38
7.8	40	0.6	1.94	46.2
7.9	40	0.58	1.86	42.9
8	40	0.56	1.82	40.71
8.1	40	0.55	1.77	38.54
8.2	40	0.53	1.75	37.29
8.3	40	0.52	1.68	34.88
8.4	40	0.5	1.66	33.38
8.5	40	0.49	1.63	32.08

Cross Section 5

Q 100=4.25 cfs at 4.24 hours where Volume=0.26 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
8.6	40	1.39	0	0.01
8.7	40	1.38	0	0.01
8.8	20	1.88	0	0.01
8.9	20	1.88	0	0
9	20	1.87	0	0
9.1	40	1.37	0	0.01
9.2	20	1.87	0	0
9.6	40	1.36	0	0
10	20	0.86	0	0
10.5	40	1.35	0	0
10.7	40	1.35	0	0
10.8	40	1.35	0	0
10.9	40	1.35	0	0
11	20	1.84	0	0.01
11.2	40	1.34	0	0
11.5	40	1.34	0	0
11.8	40	1.34	0	0.01
11.9	20	1.84	0	0
12.3	40	1.33	0	0.01
12.4	20	0.83	0	0
12.5	40	1.33	0	0
12.6	20	0.83	0	0.02
12.7	20	1.83	0	0.01
12.8	40	1.33	0	0
12.9	20	1.83	0	0
13	40	1.33	0	0
13.1	20	1.83	0	0
13.2	40	1.33	0	0
13.3	40	1.32	0	0
13.4	40	1.32	0	0.01
13.6	20	1.82	0	0
13.9	40	1.32	0	0.01
14	20	1.82	0	0
14.1	40	1.32	0	0
14.5	20	1.81	0	0
14.8	20	1.81	0	0
14.9	20	1.81	0	0
15	20	1.81	0	0
15.1	20	1.81	0	0
15.3	40	1.31	0	0.07
15.4	20	1.81	0	0

Cross Section 6

Q 100=1251.51 cfs at 4.42 hours where Volume=143.95 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
8.6	40	0.48	1.6	30.76
8.7	40	0.47	1.57	29.61
8.8	40	0.46	1.55	28.8
8.9	40	0.46	1.52	27.6
9	40	0.45	1.47	26.45
9.1	40	0.44	1.47	25.96
9.2	40	0.43	1.45	25.16
9.3	40	0.43	1.42	24.41
9.4	40	0.42	1.42	24.09
9.5	40	0.42	1.4	23.51
9.6	40	0.41	1.37	22.7
9.7	40	0.41	1.36	22.33
9.8	40	0.41	1.35	22.02
9.9	40	0.4	1.33	21.29
10	40	0.4	1.32	20.86
10.1	40	0.39	1.29	20.15
10.2	40	0.38	1.28	19.6
10.3	40	0.38	1.27	19.19
10.4	40	0.37	1.24	18.52
10.5	40	0.37	1.24	18.22
10.6	40	0.36	1.22	17.76
10.7	40	0.36	1.21	17.28
10.8	40	0.35	1.19	16.92
10.9	40	0.35	1.2	16.81
11	40	0.35	1.17	16.34
11.1	40	0.34	1.16	16
11.2	40	0.34	1.16	15.86
11.3	40	0.34	1.16	15.66
11.4	40	0.34	1.16	15.57
11.5	40	0.33	1.14	15.26
11.6	40	0.33	1.13	14.94
11.7	40	0.33	1.12	14.65
11.8	40	0.32	1.11	14.44
11.9	40	0.32	1.1	14.21
12	40	0.32	1.1	14.08
12.1	40	0.32	1.09	13.7
12.2	40	0.31	1.08	13.42
12.3	40	0.31	1.06	13.02
12.4	40	0.3	1.05	12.69
12.5	40	0.3	1.04	12.44
12.6	40	0.3	1.03	12.24
12.7	40	0.29	1.03	12.11
12.8	40	0.29	1.03	12
12.9	40	0.29	1.03	11.91
13	40	0.29	1.01	11.67
13.1	40	0.29	1.01	11.61
13.2	40	0.28	1	11.38
13.3	40	0.28	1	11.28
13.4	40	0.28	0.99	11.04
13.5	40	0.28	0.99	10.94
13.6	40	0.28	0.97	10.72
13.7	40	0.27	0.96	10.44
13.8	40	0.27	0.95	10.16

Cross Section 5

Q 100=4.25 cfs at 4.24 hours where Volume=0.26 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)

Cross Section 6

Q 100=1251.51 cfs at 4.42 hours where Volume=143.95 AF

Time (hr)	Top Width (ft)	Depth (ft)	Velocity (ft)	Discharge (cfs)
13.9	40	0.26	0.94	9.79
14	40	0.26	0.94	9.67
14.1	40	0.26	0.92	9.43
14.2	40	0.25	0.91	9.27
14.3	40	0.25	0.9	9.04
14.4	40	0.25	0.88	8.84
14.5	40	0.25	0.88	8.76
14.6	40	0.25	0.87	8.62
14.7	40	0.25	0.86	8.52
14.8	40	0.24	0.86	8.44
14.9	40	0.24	0.86	8.37
15	40	0.24	0.86	8.32
15.1	40	0.24	0.85	8.24
15.2	40	0.24	0.85	8.18
15.3	40	0.24	0.85	8.13
15.4	40	0.24	0.85	8.08
15.5	40	0.24	0.84	8
15.6	40	0.24	0.84	7.99
15.7	40	0.24	0.84	8
15.8	40	0.24	0.84	8
15.9	40	0.24	0.84	7.99
16	40	0.24	0.84	7.96

Job No. | No.

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	1	Of	3

Prorated Values for the 50, 25, 10, 5, and 2-YR 24-HR storm events based on the Flow 2-D Output of the 100-YR Hydrographs at these six revised floodplain cross sections (referenced from HYCROSSOUT.doc) from the Carefree Drainage Master Plan.

Cross Section 1

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0.00	0	0	0	0	0	0
0.10	0	0	0	0	0	0
0.20	0	0	0	0	0	0
0.30	0	0	0	0	0	0
0.40	0	0	0	0	0	0
0.50	0	0	0	0	0	0
0.60	0	0	0	0	0	0
0.70	0	0	0	0	0	0
0.80	0	0	0	0	0	0
0.90	0	0	0	0	0	0
1.00	0	0	0	0	0	0
1.10	0	0	0	0	0	0
1.20	0	0	0	0	0	0
1.30	0	0	0	0	0	0
1.40	0	0	0	0	0	0
1.50	0	0	0	0	0	0
1.60	0	0	0	0	0	0
1.70	0	0	0	0	0	0
1.80	0	0	0	0	0	0
1.90	0	0	0	0	0	0
2.00	0	0	0	0	0	0
2.10	0	0	0	0	0	0
2.20	0	0	0	0	0	0
2.30	0	0	0	0	0	0

Cross Section 2

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0.00	0	0	0	0	0	0
0.10	0	0	0	0	0	0
0.20	0	0	0	0	0	0
0.30	0	0	0	0	0	0
0.40	0	0	0	0	0	0
0.50	0	0	0	0	0	0
0.60	0	0	0	0	0	0
0.70	0	0	0	0	0	0
0.80	0	0	0	0	0	0
0.90	0	0	0	0	0	0
1.00	0	0	0	0	0	0
1.10	0	0	0	0	0	0
1.20	0	0	0	0	0	0
1.30	0	0	0	0	0	0
1.40	0	0	0	0	0	0
1.50	0	0	0	0	0	0
1.60	0	0	0	0	0	0
1.70	0	0	0	0	0	0
1.80	0	0	0	0	0	0
1.90	0	0	0	0	0	0
2.00	0	0	0	0	0	0
2.10	0	0	0	0	0	0
2.20	0	0	0	0	0	0
2.30	0	0	0	0	0	0

Cross Section 1

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.40	0	0	0	0	0	0
2.50	0	0	0	0	0	0
2.60	0	0	0	0	0	0
2.70	0	0	0	0	0	0
2.80	0	0	0	0	0	0
2.90	0.00	0.00	0.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	0.00	0.00	0.00
3.10	0.00	0.00	0.00	0.00	0.00	0.00
3.20	0.00	0.00	0.00	0.00	0.00	0.00
3.30	0.00	0.00	0.00	0.00	0.00	0.00
3.40	0.00	0.00	0.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	0.00	0.00	0.00
3.60	0.00	0.00	0.00	0.00	0.00	0.00
3.70	0.11	0.11	0.10	0.09	0.09	0.09
3.80	0.54	0.52	0.47	0.43	0.43	0.43
3.90	0.19	0.18	0.17	0.15	0.15	0.15
4.00	0.97	0.93	0.85	0.78	0.78	0.78
4.10	3.87	3.72	3.39	3.10	3.10	3.10
4.20	12.86	12.37	11.28	10.29	10.29	10.29
4.30	14.67	14.11	12.87	11.74	11.74	11.74
4.40	38.36	36.88	33.65	30.69	30.69	30.69
4.50	135.07	129.88	118.48	108.06	108.06	108.06
4.60	133.84	128.69	117.40	107.07	107.07	107.07
4.70	122.69	117.97	107.62	98.15	98.15	98.15
4.80	108.38	104.21	95.07	86.70	86.70	86.70
4.90	89.06	85.63	78.12	71.25	71.25	71.25
5.00	82.41	79.24	72.29	65.93	65.93	65.93
5.10	70.10	67.40	61.49	56.08	56.08	56.08
5.20	62.16	59.77	54.53	49.73	49.73	49.73
5.30	53.79	51.72	47.18	43.03	43.03	43.03
5.40	46.04	44.27	40.39	36.83	36.83	36.83
5.50	37.29	35.86	32.71	29.83	29.83	29.83
5.60	33.93	32.63	29.76	27.14	27.14	27.14
5.70	28.00	26.92	24.56	22.40	22.40	22.40
5.80	20.54	19.75	18.02	16.43	16.43	16.43
5.90	15.84	15.23	13.89	12.67	12.67	12.67
6.00	12.15	11.68	10.66	9.72	9.72	9.72
6.10	6.43	6.18	5.64	5.14	5.14	5.14
6.20	3.75	3.61	3.29	3.00	3.00	3.00
6.30	2.44	2.35	2.14	1.95	1.95	1.95
6.40	13.44	12.92	11.79	10.75	10.75	10.75
6.50	11.79	11.34	10.34	9.43	9.43	9.43
6.60	9.45	9.09	8.29	7.56	7.56	7.56
6.70	11.53	11.09	10.11	9.22	9.22	9.22

Cross Section 2

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.40	0	0	0	0	0	0
2.50	0	0	0	0	0	0
2.60	0	0	0	0	0	0
2.70	0	0	0	0	0	0
2.80	0	0	0	0	0	0
2.90	0	0	0	0	0	0
3.00	0	0	0	0	0	0
3.10	0	0	0	0	0	0
3.20	0	0	0	0	0	0
3.30	0	0	0	0	0	0
3.40	0	0	0	0	0	0
3.50	0	0	0	0	0	0
3.60	0	0	0	0	0	0
3.70	0.06	0.06	0.05	0.05	0.05	0.05
3.80	0.21	0.20	0.18	0.17	0.17	0.17
3.90	4.92	4.73	4.32	3.94	3.94	3.94
4.00	15.82	15.21	13.88	12.66	12.66	12.66
4.10	42.09	40.47	36.92	33.67	33.67	33.67
4.20	68.3	65.67	59.91	54.64	54.64	54.64
4.30	70.34	67.63	61.70	56.27	56.27	56.27
4.40	82.67	79.49	72.52	66.14	66.14	66.14
4.50	198.46	190.83	174.09	158.77	158.77	158.77
4.60	208.82	200.79	183.18	167.06	167.06	167.06
4.70	193.16	185.73	169.44	154.53	154.53	154.53
4.80	164.98	158.63	144.72	131.98	131.98	131.98
4.90	143.11	137.61	125.54	114.49	114.49	114.49
5.00	117.68	113.15	103.23	94.14	94.14	94.14
5.10	107.17	103.05	94.01	85.74	85.74	85.74
5.20	99.98	96.13	87.70	79.98	79.98	79.98
5.30	91.35	87.84	80.13	73.08	73.08	73.08
5.40	87.97	84.59	77.17	70.38	70.38	70.38
5.50	83.27	80.07	73.04	66.62	66.62	66.62
5.60	80.93	77.82	70.99	64.74	64.74	64.74
5.70	76.24	73.31	66.88	60.99	60.99	60.99
5.80	74.23	71.38	65.11	59.38	59.38	59.38
5.90	70.99	68.26	62.27	56.79	56.79	56.79
6.00	67.18	64.60	58.93	53.74	53.74	53.74
6.10	63.35	60.91	55.57	50.68	50.68	50.68
6.20	60.23	57.91	52.83	48.18	48.18	48.18
6.30	55.6	53.46	48.77	44.48	44.48	44.48
6.40	37.08	35.65	32.53	29.66	29.66	29.66
6.50	34.4	33.08	30.18	27.52	27.52	27.52
6.60	30.86	29.67	27.07	24.69	24.69	24.69
6.70	27.52	26.46	24.14	22.02	22.02	22.02

Cross Section 1

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.80	5.71	5.49	5.01	4.57	4.57	4.57
6.90	4.22	4.06	3.70	3.38	3.38	3.38
7.00	3.59	3.45	3.15	2.87	2.87	2.87
7.10	3.00	2.88	2.63	2.40	2.40	2.40
7.20	2.41	2.32	2.11	1.93	1.93	1.93
7.30	1.97	1.89	1.73	1.58	1.58	1.58
7.40	1.59	1.53	1.39	1.27	1.27	1.27
7.50	1.31	1.26	1.15	1.05	1.05	1.05
7.60	1.14	1.10	1.00	0.91	0.91	0.91
7.70	1.03	0.99	0.90	0.82	0.82	0.82
7.80	1.04	1.00	0.91	0.83	0.83	0.83
7.90	1.00	0.96	0.88	0.80	0.80	0.80
8.00	0.82	0.79	0.72	0.66	0.66	0.66
8.10	0.78	0.75	0.68	0.62	0.62	0.62
8.20	0.43	0.41	0.38	0.34	0.34	0.34
8.30	0.40	0.38	0.35	0.32	0.32	0.32
8.40	0.30	0.29	0.26	0.24	0.24	0.24
8.50	0.24	0.23	0.21	0.19	0.19	0.19
8.60	0.20	0.19	0.18	0.16	0.16	0.16
8.70	0.22	0.21	0.19	0.18	0.18	0.18
8.80	0.13	0.13	0.11	0.10	0.10	0.10
8.90	0.11	0.11	0.10	0.09	0.09	0.09
9.00	0.09	0.09	0.08	0.07	0.07	0.07
9.10	0.07	0.07	0.06	0.06	0.06	0.06
9.20	0.04	0.04	0.04	0.03	0.03	0.03
9.30	0.03	0.03	0.03	0.02	0.02	0.02
9.40	0.02	0.02	0.02	0.02	0.02	0.02
9.50	0.01	0.01	0.01	0.01	0.01	0.01
9.60	0.01	0.01	0.01	0.01	0.01	0.01
9.70	0.01	0.01	0.01	0.01	0.01	0.01
9.80	0.00	0.00	0.00	0.00	0.00	0.00
9.90	0.00	0.00	0.00	0.00	0.00	0.00
10.10	0.00	0.00	0.00	0.00	0.00	0.00
10.20	0.00	0.00	0.00	0.00	0.00	0.00
10.30	0.01	0.01	0.01	0.01	0.01	0.01
10.60	0.00	0.00	0.00	0.00	0.00	0.00
10.70	0.00	0.00	0.00	0.00	0.00	0.00
10.80	0.00	0.00	0.00	0.00	0.00	0.00
10.90	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	0.00	0.00	0.00
11.60	0.00	0.00	0.00	0.00	0.00	0.00
11.70	0.00	0.00	0.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	0.00	0.00	0.00

Cross Section 2

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.80	25.07	24.11	21.99	20.06	20.06	20.06
6.90	23.88	22.96	20.95	19.10	19.10	19.10
7.00	21.83	20.99	19.15	17.46	17.46	17.46
7.10	19.98	19.21	17.53	15.98	15.98	15.98
7.20	18.41	17.70	16.15	14.73	14.73	14.73
7.30	16.76	16.12	14.70	13.41	13.41	13.41
7.40	15.18	14.60	13.32	12.14	12.14	12.14
7.50	13.65	13.13	11.97	10.92	10.92	10.92
7.60	12.63	12.14	11.08	10.10	10.10	10.10
7.70	11.77	11.32	10.32	9.42	9.42	9.42
7.80	10.72	10.31	9.40	8.58	8.58	8.58
7.90	9.53	9.16	8.36	7.62	7.62	7.62
8.00	8.73	8.39	7.66	6.98	6.98	6.98
8.10	8.01	7.70	7.03	6.41	6.41	6.41
8.20	7.35	7.07	6.45	5.88	5.88	5.88
8.30	6.7	6.44	5.88	5.36	5.36	5.36
8.40	6.45	6.20	5.66	5.16	5.16	5.16
8.50	5.83	5.61	5.11	4.66	4.66	4.66
8.60	5.52	5.31	4.84	4.42	4.42	4.42
8.70	5.36	5.15	4.70	4.29	4.29	4.29
8.80	5.1	4.90	4.47	4.08	4.08	4.08
8.90	4.86	4.67	4.26	3.89	3.89	3.89
9.00	4.44	4.27	3.89	3.55	3.55	3.55
9.10	4.07	3.91	3.57	3.26	3.26	3.26
9.20	3.9	3.75	3.42	3.12	3.12	3.12
9.30	3.73	3.59	3.27	2.98	2.98	2.98
9.40	3.42	3.29	3.00	2.74	2.74	2.74
9.50	3.17	3.05	2.78	2.54	2.54	2.54
9.60	3.03	2.91	2.66	2.42	2.42	2.42
9.70	2.93	2.82	2.57	2.34	2.34	2.34
9.80	2.79	2.68	2.45	2.23	2.23	2.23
9.90	2.6	2.50	2.28	2.08	2.08	2.08
10.00	2.38	2.29	2.09	1.90	1.90	1.90
10.10	2.18	2.10	1.91	1.74	1.74	1.74
10.20	2.12	2.04	1.86	1.70	1.70	1.70
10.30	1.66	1.60	1.46	1.33	1.33	1.33
10.40	1.33	1.28	1.17	1.06	1.06	1.06
10.50	1.44	1.38	1.26	1.15	1.15	1.15
10.60	1.23	1.18	1.08	0.98	0.98	0.98
10.70	1.45	1.39	1.27	1.16	1.16	1.16
10.80	1.4	1.35	1.23	1.12	1.12	1.12
10.90	1.28	1.23	1.12	1.02	1.02	1.02
11.00	1.15	1.11	1.01	0.92	0.92	0.92
11.10	1.12	1.08	0.98	0.90	0.90	0.90

Cross Section 1

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
12.60	0.00	0.00	0.00	0.00	0.00	0.00
13.10	0.00	0.00	0.00	0.00	0.00	0.00
13.70	0.03	0.03	0.03	0.02	0.02	0.02
14.80	0.00	0.00	0.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	0.00	0.00	0.00
15.60	0.00	0.00	0.00	0.00	0.00	0.00

Cross Section 2

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
11.20	1.02	0.98	0.89	0.82	0.82	0.82
11.30	0.94	0.90	0.82	0.75	0.75	0.75
11.40	0.89	0.86	0.78	0.71	0.71	0.71
11.50	0.82	0.79	0.72	0.66	0.66	0.66
11.60	0.76	0.73	0.67	0.61	0.61	0.61
11.70	0.71	0.68	0.62	0.57	0.57	0.57
11.8	0.67	0.64	0.59	0.54	0.54	0.54
11.9	0.62	0.60	0.54	0.50	0.50	0.50
12	0.58	0.56	0.51	0.46	0.46	0.46
12.1	0.55	0.53	0.48	0.44	0.44	0.44
12.2	0.55	0.53	0.48	0.44	0.44	0.44
12.3	0.53	0.51	0.46	0.42	0.42	0.42
12.4	0.49	0.47	0.43	0.39	0.39	0.39
12.5	0.48	0.46	0.42	0.38	0.38	0.38
12.6	0.47	0.45	0.41	0.38	0.38	0.38
12.7	0.39	0.38	0.34	0.31	0.31	0.31
12.8	0.37	0.36	0.32	0.30	0.30	0.30
12.9	0.42	0.40	0.37	0.34	0.34	0.34
13	0.39	0.38	0.34	0.31	0.31	0.31
13.1	0.34	0.33	0.30	0.27	0.27	0.27
13.2	0.33	0.32	0.29	0.26	0.26	0.26
13.3	0.32	0.31	0.28	0.26	0.26	0.26
13.4	0.31	0.30	0.27	0.25	0.25	0.25
13.5	0.3	0.29	0.26	0.24	0.24	0.24
13.6	0.29	0.28	0.25	0.23	0.23	0.23
13.7	0.29	0.28	0.25	0.23	0.23	0.23
13.8	0.28	0.27	0.25	0.22	0.22	0.22
13.9	0.28	0.27	0.25	0.22	0.22	0.22
14	0.27	0.26	0.24	0.22	0.22	0.22
14.1	0.26	0.25	0.23	0.21	0.21	0.21
14.2	0.25	0.24	0.22	0.20	0.20	0.20
14.3	0.23	0.22	0.20	0.18	0.18	0.18
14.4	0.23	0.22	0.20	0.18	0.18	0.18
14.5	0.22	0.21	0.19	0.18	0.18	0.18
14.6	0.21	0.20	0.18	0.17	0.17	0.17
14.7	0.2	0.19	0.18	0.16	0.16	0.16
14.8	0.19	0.18	0.17	0.15	0.15	0.15
14.9	0.19	0.18	0.17	0.15	0.15	0.15
15	0.18	0.17	0.16	0.14	0.14	0.14
15.1	0.17	0.16	0.15	0.14	0.14	0.14
15.2	0.16	0.15	0.14	0.13	0.13	0.13
15.3	0.15	0.14	0.13	0.12	0.12	0.12
15.4	0.15	0.14	0.13	0.12	0.12	0.12
15.5	0.14	0.13	0.12	0.11	0.11	0.11

Cross Section 1

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr

Cross Section 2

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
15.6	0.13	0.13	0.11	0.10	0.10	0.10
15.7	0.13	0.13	0.11	0.10	0.10	0.10
15.8	0.12	0.12	0.11	0.10	0.10	0.10
15.9	0.04	0.04	0.04	0.03	0.03	0.03
16	0.11	0.11	0.10	0.09	0.09	0.09

Job No. | No.

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/15/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	2	Of	3

Cross Section 3

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0	0	0	0	0	0	0
0.1	0	0	0	0	0	0
0.2	0	0	0	0	0	0
0.3	0	0	0	0	0	0
0.4	0	0	0	0	0	0
0.5	0	0	0	0	0	0
0.6	0	0	0	0	0	0
0.7	0	0	0	0	0	0
0.8	0	0	0	0	0	0
0.9	0	0	0	0	0	0
1	0	0	0	0	0	0
1.1	0	0	0	0	0	0
1.2	0	0	0	0	0	0
1.3	0	0	0	0	0	0
1.4	0	0	0	0	0	0
1.5	0	0	0	0	0	0
1.6	0	0	0	0	0	0
1.7	0	0	0	0	0	0
1.8	0	0	0	0	0	0
1.9	0	0	0	0	0	0
2	0	0	0	0	0	0
2.1	0	0	0	0	0	0
2.2	0	0	0	0	0	0
2.3	0	0	0	0	0	0

Cross Section 4

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0	0	0	0	0	0	0
0.1	0	0	0	0	0	0
0.2	0	0	0	0	0	0
0.3	0	0	0	0	0	0
0.4	0	0	0	0	0	0
0.5	0	0	0	0	0	0
0.6	0	0	0	0	0	0
0.7	0	0	0	0	0	0
0.8	0	0	0	0	0	0
0.9	0	0	0	0	0	0
1	0	0	0	0	0	0
1.1	0	0	0	0	0	0
1.2	0	0	0	0	0	0
1.3	0	0	0	0	0	0
1.4	0	0	0	0	0	0
1.5	0	0	0	0	0	0
1.6	0	0	0	0	0	0
1.7	0	0	0	0	0	0
1.8	0	0	0	0	0	0
1.9	0	0	0	0	0	0
2	0	0	0	0	0	0
2.1	0	0	0	0	0	0
2.2	0	0	0	0	0	0
2.3	0	0	0	0	0	0

Cross Section 3

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.4	0	0	0	0	0	0
2.5	0	0	0	0	0	0
2.6	0	0	0	0	0	0
2.7	0	0	0	0	0	0
2.8	0	0	0	0	0	0
2.9	0	0	0	0	0	0
3	0	0	0	0	0	0
3.1	0	0	0	0	0	0
3.2	0	0	0	0	0	0
3.3	0	0	0	0	0	0
3.4	0	0	0	0	0	0
3.5	0	0	0	0	0	0
3.6	0	0	0	0	0	0
3.7	0	0	0	0	0	0
3.8	1.96	1.88	1.72	1.57	1.57	1.57
3.9	6.05	5.82	5.31	4.84	4.84	4.84
4	8.11	7.80	7.11	6.49	6.49	6.49
4.1	2.58	2.48	2.26	2.06	2.06	2.06
4.2	3.37	3.24	2.96	2.70	2.70	2.70
4.3	15.16	14.58	13.30	12.13	12.13	12.13
4.4	223.84	215.23	196.35	179.07	179.07	179.07
4.5	553.48	532.19	485.51	442.78	442.78	442.78
4.6	557.89	536.43	489.38	446.31	446.31	446.31
4.7	484.36	465.73	424.88	387.49	387.49	387.49
4.8	405.52	389.92	355.72	324.42	324.42	324.42
4.9	337.86	324.87	296.37	270.29	270.29	270.29
5	289.58	278.44	254.02	231.66	231.66	231.66
5.1	244.22	234.83	214.23	195.38	195.38	195.38
5.2	200.76	193.04	176.11	160.61	160.61	160.61
5.3	162.35	156.11	142.41	129.88	129.88	129.88
5.4	123.39	118.64	108.24	98.71	98.71	98.71
5.5	96.28	92.58	84.46	77.02	77.02	77.02
5.6	70.95	68.22	62.24	56.76	56.76	56.76
5.7	48.75	46.88	42.76	39.00	39.00	39.00
5.8	36.47	35.07	31.99	29.18	29.18	29.18
5.9	26.05	25.05	22.85	20.84	20.84	20.84
6	18.93	18.20	16.61	15.14	15.14	15.14
6.1	13.62	13.10	11.95	10.90	10.90	10.90
6.2	9.5	9.13	8.33	7.60	7.60	7.60
6.3	6.39	6.14	5.61	5.11	5.11	5.11
6.4	3.99	3.84	3.50	3.19	3.19	3.19
6.5	2.65	2.55	2.32	2.12	2.12	2.12
6.6	1.3	1.25	1.14	1.04	1.04	1.04
6.7	0.78	0.75	0.68	0.62	0.62	0.62

Cross Section 4

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.4	0	0	0	0	0	0
2.5	0	0	0	0	0	0
2.6	0	0	0	0	0	0
2.7	0	0	0	0	0	0
2.8	0	0	0	0	0	0
2.9	0	0	0	0	0	0
3	0	0	0	0	0	0
3.1	0	0	0	0	0	0
3.2	0	0	0	0	0	0
3.3	0	0	0	0	0	0
3.4	0	0	0	0	0	0
3.5	0	0	0	0	0	0
3.6	0.03	0.03	0.03	0.02	0.02	0.02
3.7	0.42	0.40	0.37	0.34	0.34	0.34
3.8	2.14	2.06	1.88	1.71	1.71	1.71
3.9	3.72	3.58	3.26	2.98	2.98	2.98
4	27.05	26.01	23.73	21.64	21.64	21.64
4.1	38.79	37.30	34.03	31.03	31.03	31.03
4.2	31.42	30.21	27.56	25.14	25.14	25.14
4.3	21.96	21.12	19.26	17.57	17.57	17.57
4.4	18.77	18.05	16.46	15.02	15.02	15.02
4.5	16.50	15.87	14.47	13.20	13.20	13.20
4.6	13.52	13.00	11.86	10.82	10.82	10.82
4.7	11.90	11.44	10.44	9.52	9.52	9.52
4.8	13.80	13.27	12.11	11.04	11.04	11.04
4.9	29.40	28.27	25.79	23.52	23.52	23.52
5	29.93	28.78	26.25	23.94	23.94	23.94
5.1	26.63	25.61	23.36	21.30	21.30	21.30
5.2	23.02	22.13	20.19	18.42	18.42	18.42
5.3	19.99	19.22	17.54	15.99	15.99	15.99
5.4	16.56	15.92	14.53	13.25	13.25	13.25
5.5	14.09	13.55	12.36	11.27	11.27	11.27
5.6	12.26	11.79	10.75	9.81	9.81	9.81
5.7	10.62	10.21	9.32	8.50	8.50	8.50
5.8	9.30	8.94	8.16	7.44	7.44	7.44
5.9	8.10	7.79	7.11	6.48	6.48	6.48
6	6.60	6.35	5.79	5.28	5.28	5.28
6.1	5.39	5.18	4.73	4.31	4.31	4.31
6.2	5.04	4.85	4.42	4.03	4.03	4.03
6.3	4.52	4.35	3.96	3.62	3.62	3.62
6.4	3.98	3.83	3.49	3.18	3.18	3.18
6.5	3.25	3.13	2.85	2.60	2.60	2.60
6.6	2.75	2.64	2.41	2.20	2.20	2.20
6.7	2.59	2.49	2.27	2.07	2.07	2.07

Cross Section 3

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.8	0.57	0.55	0.50	0.46	0.46	0.46
6.9	0.37	0.36	0.32	0.30	0.30	0.30
7	0.3	0.29	0.26	0.24	0.24	0.24
7.1	0.23	0.22	0.20	0.18	0.18	0.18
7.2	0.17	0.16	0.15	0.14	0.14	0.14
7.3	0.12	0.12	0.11	0.10	0.10	0.10
7.4	0.08	0.08	0.07	0.06	0.06	0.06
7.5	0.05	0.05	0.04	0.04	0.04	0.04
7.6	0.02	0.02	0.02	0.02	0.02	0.02

Cross Section 4

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.8	2.69	2.59	2.36	2.15	2.15	2.15
6.9	1.86	1.79	1.63	1.49	1.49	1.49
7	0.87	0.84	0.76	0.70	0.70	0.70
7.1	1.28	1.23	1.12	1.02	1.02	1.02
7.2	1.59	1.53	1.39	1.27	1.27	1.27
7.3	0.92	0.88	0.81	0.74	0.74	0.74
7.4	2.07	1.99	1.82	1.66	1.66	1.66
7.5	0.91	0.88	0.80	0.73	0.73	0.73
7.6	1.76	1.69	1.54	1.41	1.41	1.41
7.7	1.47	1.41	1.29	1.18	1.18	1.18
7.8	0.89	0.86	0.78	0.71	0.71	0.71
7.9	0.80	0.77	0.70	0.64	0.64	0.64
8	0.20	0.19	0.18	0.16	0.16	0.16
8.1	0.56	0.54	0.49	0.45	0.45	0.45
8.2	0.13	0.13	0.11	0.10	0.10	0.10
8.3	0.41	0.39	0.36	0.33	0.33	0.33
8.4	0.42	0.40	0.37	0.34	0.34	0.34
8.5	0.27	0.26	0.24	0.22	0.22	0.22
8.6	0.27	0.26	0.24	0.22	0.22	0.22
8.7	0.24	0.23	0.21	0.19	0.19	0.19
8.8	0.61	0.59	0.54	0.49	0.49	0.49
8.9	0.71	0.68	0.62	0.57	0.57	0.57
9	0.48	0.46	0.42	0.38	0.38	0.38
9.1	0.34	0.33	0.30	0.27	0.27	0.27
9.2	0.37	0.36	0.32	0.30	0.30	0.30
9.3	0.29	0.28	0.25	0.23	0.23	0.23
9.4	0.47	0.45	0.41	0.38	0.38	0.38
9.5	0.44	0.42	0.39	0.35	0.35	0.35
9.6	0.43	0.41	0.38	0.34	0.34	0.34
9.7	0.42	0.40	0.37	0.34	0.34	0.34
9.8	0.42	0.40	0.37	0.34	0.34	0.34
9.9	0.47	0.45	0.41	0.38	0.38	0.38
10	0.34	0.33	0.30	0.27	0.27	0.27
10.1	0.04	0.04	0.04	0.03	0.03	0.03
10.2	0.07	0.07	0.06	0.06	0.06	0.06
10.3	0.11	0.11	0.10	0.09	0.09	0.09
10.4	0.15	0.14	0.13	0.12	0.12	0.12
10.5	0.27	0.26	0.24	0.22	0.22	0.22
10.6	0.35	0.34	0.31	0.28	0.28	0.28
10.7	0.34	0.33	0.30	0.27	0.27	0.27
10.8	0.13	0.13	0.11	0.10	0.10	0.10
10.9	0.21	0.20	0.18	0.17	0.17	0.17
11	0.10	0.10	0.09	0.08	0.08	0.08
11.1	0.25	0.24	0.22	0.20	0.20	0.20

Cross Section 3

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr

Cross Section 4

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
11.2	0.04	0.04	0.04	0.03	0.03	0.03
11.3	0.19	0.18	0.17	0.15	0.15	0.15
11.4	0.10	0.10	0.09	0.08	0.08	0.08
11.5	0.24	0.23	0.21	0.19	0.19	0.19
11.6	0.10	0.10	0.09	0.08	0.08	0.08
11.7	0.18	0.17	0.16	0.14	0.14	0.14
11.8	0.21	0.20	0.18	0.17	0.17	0.17
11.9	0.14	0.13	0.12	0.11	0.11	0.11
12	0.18	0.17	0.16	0.14	0.14	0.14
12.1	0.17	0.16	0.15	0.14	0.14	0.14
12.2	0.09	0.09	0.08	0.07	0.07	0.07
12.3	0.09	0.09	0.08	0.07	0.07	0.07
12.4	0.10	0.10	0.09	0.08	0.08	0.08
12.5	0.07	0.07	0.06	0.06	0.06	0.06
12.6	0.05	0.05	0.04	0.04	0.04	0.04
12.7	0.06	0.06	0.05	0.05	0.05	0.05
12.8	0.07	0.07	0.06	0.06	0.06	0.06
12.9	0.08	0.08	0.07	0.06	0.06	0.06
13	0.09	0.09	0.08	0.07	0.07	0.07
13.1	0.06	0.06	0.05	0.05	0.05	0.05
13.2	0.07	0.07	0.06	0.06	0.06	0.06
13.3	0.04	0.04	0.04	0.03	0.03	0.03
13.4	0.03	0.03	0.03	0.02	0.02	0.02
13.5	0.05	0.05	0.04	0.04	0.04	0.04
13.6	0.04	0.04	0.04	0.03	0.03	0.03
13.7	0.02	0.02	0.02	0.02	0.02	0.02
13.8	0.02	0.02	0.02	0.02	0.02	0.02
13.9	0.02	0.02	0.02	0.02	0.02	0.02
14	0.05	0.05	0.04	0.04	0.04	0.04
14.1	0.03	0.03	0.03	0.02	0.02	0.02
14.2	0.06	0.06	0.05	0.05	0.05	0.05
14.3	0.04	0.04	0.04	0.03	0.03	0.03
14.4	0.05	0.05	0.04	0.04	0.04	0.04
14.5	0.04	0.04	0.04	0.03	0.03	0.03
14.6	0.02	0.02	0.02	0.02	0.02	0.02
14.7	0.04	0.04	0.04	0.03	0.03	0.03
14.8	0.01	0.01	0.01	0.01	0.01	0.01
14.9	0.05	0.05	0.04	0.04	0.04	0.04
15	0.02	0.02	0.02	0.02	0.02	0.02
15.1	0.02	0.02	0.02	0.02	0.02	0.02
15.2	0.04	0.04	0.04	0.03	0.03	0.03
15.3	0.02	0.02	0.02	0.02	0.02	0.02
15.4	0.02	0.02	0.02	0.02	0.02	0.02
15.5	0.03	0.03	0.03	0.02	0.02	0.02

Cross Section 3

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr

Cross Section 4

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
15.6	0.03	0.03	0.03	0.02	0.02	0.02
15.7	0.03	0.03	0.03	0.02	0.02	0.02
15.8	0.04	0.04	0.04	0.03	0.03	0.03
15.9	0.03	0.03	0.03	0.02	0.02	0.02
16	0.03	0.03	0.03	0.02	0.02	0.02

Job No. | No.

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/15/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Hydrograph Data: 24-hour	Sheet	3	Of	3

Cross Section 5

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0	0	0	0	0	0	0
0.1	0	0	0	0	0	0
0.2	0	0	0	0	0	0
0.3	0	0	0	0	0	0
0.4	0	0	0	0	0	0
0.5	0	0	0	0	0	0
0.6	0	0	0	0	0	0
0.7	0	0	0	0	0	0
0.8	0	0	0	0	0	0
0.9	0	0	0	0	0	0
1	0	0	0	0	0	0
1.1	0	0	0	0	0	0
1.2	0	0	0	0	0	0
1.3	0	0	0	0	0	0
1.4	0	0	0	0	0	0
1.5	0	0	0	0	0	0
1.6	0	0	0	0	0	0
1.7	0	0	0	0	0	0
1.8	0	0	0	0	0	0
1.9	0	0	0	0	0	0
2	0	0	0	0	0	0
2.1	0	0	0	0	0	0
2.2	0	0	0	0	0	0
2.3	0	0	0	0	0	0

Cross Section 6

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
0	0	0	0	0	0	0
0.1	0	0	0	0	0	0
0.2	0	0	0	0	0	0
0.3	0	0	0	0	0	0
0.4	0	0	0	0	0	0
0.5	0	0	0	0	0	0
0.6	0	0	0	0	0	0
0.7	0	0	0	0	0	0
0.8	0	0	0	0	0	0
0.9	0	0	0	0	0	0
1	0	0	0	0	0	0
1.1	0	0	0	0	0	0
1.2	0	0	0	0	0	0
1.3	0	0	0	0	0	0
1.4	0.59	0.57	0.52	0.47	0.47	0.47
1.5	2.27	2.18	1.99	1.82	1.82	1.82
1.6	2.61	2.51	2.29	2.09	2.09	2.09
1.7	2.85	2.74	2.50	2.28	2.28	2.28
1.8	2.95	2.84	2.59	2.36	2.36	2.36
1.9	3.1	2.98	2.72	2.48	2.48	2.48
2	3.29	3.16	2.89	2.63	2.63	2.63
2.1	3.52	3.38	3.09	2.82	2.82	2.82
2.2	3.71	3.57	3.25	2.97	2.97	2.97
2.3	3.83	3.68	3.36	3.06	3.06	3.06

Cross Section 5

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.4	0	0	0	0	0	0
2.5	0	0	0	0	0	0
2.6	0	0	0	0	0	0
2.7	0	0	0	0	0	0
2.8	0	0	0	0	0	0
2.9	0	0	0	0	0	0
3	0	0	0	0	0	0
3.1	0	0	0	0	0	0
3.2	0	0	0	0	0	0
3.3	0	0	0	0	0	0
3.4	0	0	0	0	0	0
3.5	0	0	0	0	0	0
3.6	0.00	0.00	0.00	0.00	0.00	0.00
3.7	0.04	0.04	0.04	0.03	0.03	0.03
3.8	0.67	0.64	0.59	0.54	0.54	0.54
3.9	1.31	1.26	1.15	1.05	1.05	1.05
4	1.84	1.77	1.61	1.47	1.47	1.47
4.1	2.83	2.72	2.48	2.26	2.26	2.26
4.2	3.37	3.24	2.96	2.70	2.70	2.70
4.3	3.60	3.46	3.16	2.88	2.88	2.88
4.4	2.91	2.80	2.55	2.33	2.33	2.33
4.5	2.42	2.33	2.12	1.94	1.94	1.94
4.6	1.43	1.38	1.25	1.14	1.14	1.14
4.7	1.76	1.69	1.54	1.41	1.41	1.41
4.8	1.17	1.13	1.03	0.94	0.94	0.94
4.9	1.01	0.97	0.89	0.81	0.81	0.81
5	0.85	0.82	0.75	0.68	0.68	0.68
5.1	0.80	0.77	0.70	0.64	0.64	0.64
5.2	0.67	0.64	0.59	0.54	0.54	0.54
5.3	0.48	0.46	0.42	0.38	0.38	0.38
5.4	0.47	0.45	0.41	0.38	0.38	0.38
5.5	0.29	0.28	0.25	0.23	0.23	0.23
5.6	0.36	0.35	0.32	0.29	0.29	0.29
5.7	0.25	0.24	0.22	0.20	0.20	0.20
5.8	0.16	0.15	0.14	0.13	0.13	0.13
5.9	0.22	0.21	0.19	0.18	0.18	0.18
6	0.21	0.20	0.18	0.17	0.17	0.17
6.1	0.11	0.11	0.10	0.09	0.09	0.09
6.2	0.09	0.09	0.08	0.07	0.07	0.07
6.3	0.13	0.13	0.11	0.10	0.10	0.10
6.4	0.07	0.07	0.06	0.06	0.06	0.06
6.5	0.07	0.07	0.06	0.06	0.06	0.06
6.6	0.15	0.14	0.13	0.12	0.12	0.12
6.7	0.03	0.03	0.03	0.02	0.02	0.02

Cross Section 6

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
2.4	4.02	3.87	3.53	3.22	3.22	3.22
2.5	4.18	4.02	3.67	3.34	3.34	3.34
2.6	4.39	4.22	3.85	3.51	3.51	3.51
2.7	4.72	4.54	4.14	3.78	3.78	3.78
2.8	5.19	4.99	4.55	4.15	4.15	4.15
2.9	5.7	5.48	5.00	4.56	4.56	4.56
3	6.56	6.31	5.75	5.25	5.25	5.25
3.1	10.56	10.15	9.26	8.45	8.45	8.45
3.2	20.2	19.42	17.72	16.16	16.16	16.16
3.3	25.52	24.54	22.39	20.42	20.42	20.42
3.4	30.32	29.15	26.60	24.26	24.26	24.26
3.5	33.97	32.66	29.80	27.18	27.18	27.18
3.6	41.23	39.64	36.17	32.98	32.98	32.98
3.7	69.55	66.88	61.01	55.64	55.64	55.64
3.8	206.95	198.99	181.54	165.56	165.56	165.56
3.9	363.49	349.51	318.85	290.79	290.79	290.79
4	608.08	584.69	533.40	486.46	486.46	486.46
4.1	767.6	738.08	673.33	614.08	614.08	614.08
4.2	995.12	956.85	872.91	796.10	796.10	796.10
4.3	1056.41	1015.78	926.68	845.13	845.13	845.13
4.4	1235.54	1188.02	1083.81	988.43	988.43	988.43
4.5	1198.32	1152.23	1051.16	958.66	958.66	958.66
4.6	1078.59	1037.11	946.13	862.87	862.87	862.87
4.7	945.57	909.20	829.45	756.46	756.46	756.46
4.8	854.97	822.09	749.97	683.98	683.98	683.98
4.9	782.6	752.50	686.49	626.08	626.08	626.08
5	718.04	690.42	629.86	574.43	574.43	574.43
5.1	626	601.92	549.12	500.80	500.80	500.80
5.2	525.97	505.74	461.38	420.78	420.78	420.78
5.3	440.05	423.13	386.01	352.04	352.04	352.04
5.4	378.58	364.02	332.09	302.86	302.86	302.86
5.5	326.95	314.38	286.80	261.56	261.56	261.56
5.6	282.22	271.37	247.56	225.78	225.78	225.78
5.7	247.17	237.66	216.82	197.74	197.74	197.74
5.8	216.01	207.70	189.48	172.81	172.81	172.81
5.9	191.48	184.12	167.96	153.18	153.18	153.18
6	170.93	164.36	149.94	136.74	136.74	136.74
6.1	153.54	147.63	134.68	122.83	122.83	122.83
6.2	139.24	133.88	122.14	111.39	111.39	111.39
6.3	126.93	122.05	111.34	101.54	101.54	101.54
6.4	116.2	111.73	101.93	92.96	92.96	92.96
6.5	107.13	103.01	93.97	85.70	85.70	85.70
6.6	98.18	94.40	86.12	78.54	78.54	78.54
6.7	91.55	88.03	80.31	73.24	73.24	73.24

Cross Section 5

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.8	0.03	0.03	0.03	0.02	0.02	0.02
6.9	0.10	0.10	0.09	0.08	0.08	0.08
7	0.05	0.05	0.04	0.04	0.04	0.04
7.1	0.11	0.11	0.10	0.09	0.09	0.09
7.2	0.03	0.03	0.03	0.02	0.02	0.02
7.3	0.05	0.05	0.04	0.04	0.04	0.04
7.4	0.01	0.01	0.01	0.01	0.01	0.01
7.5	0.04	0.04	0.04	0.03	0.03	0.03
7.6	0.02	0.02	0.02	0.02	0.02	0.02
7.7	0.05	0.05	0.04	0.04	0.04	0.04
7.8	0.03	0.03	0.03	0.02	0.02	0.02
7.9	0.02	0.02	0.02	0.02	0.02	0.02
8	0.01	0.01	0.01	0.01	0.01	0.01
8.1	0.06	0.06	0.05	0.05	0.05	0.05
8.2	0.01	0.01	0.01	0.01	0.01	0.01
8.3	0.01	0.01	0.01	0.01	0.01	0.01
8.4	0.01	0.01	0.01	0.01	0.01	0.01
8.5	0.01	0.01	0.01	0.01	0.01	0.01
8.6	0.01	0.01	0.01	0.01	0.01	0.01
8.7	0.01	0.01	0.01	0.01	0.01	0.01
8.8	0.01	0.01	0.01	0.01	0.01	0.01
8.9	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00
9.1	0.01	0.01	0.01	0.01	0.01	0.01
9.2	0.00	0.00	0.00	0.00	0.00	0.00
9.6	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00
10.5	0.00	0.00	0.00	0.00	0.00	0.00
10.7	0.00	0.00	0.00	0.00	0.00	0.00
10.8	0.00	0.00	0.00	0.00	0.00	0.00
10.9	0.00	0.00	0.00	0.00	0.00	0.00
11	0.01	0.01	0.01	0.01	0.01	0.01
11.2	0.00	0.00	0.00	0.00	0.00	0.00
11.5	0.00	0.00	0.00	0.00	0.00	0.00
11.8	0.01	0.01	0.01	0.01	0.01	0.01
11.9	0.00	0.00	0.00	0.00	0.00	0.00
12.3	0.01	0.01	0.01	0.01	0.01	0.01
12.4	0.00	0.00	0.00	0.00	0.00	0.00
12.5	0.00	0.00	0.00	0.00	0.00	0.00
12.6	0.02	0.02	0.02	0.02	0.02	0.02
12.7	0.01	0.01	0.01	0.01	0.01	0.01
12.8	0.00	0.00	0.00	0.00	0.00	0.00
12.9	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00

Cross Section 6

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
6.8	85.28	82.00	74.81	68.22	68.22	68.22
6.9	79.28	76.23	69.54	63.42	63.42	63.42
7	73.58	70.75	64.54	58.86	58.86	58.86
7.1	67.19	64.61	58.94	53.75	53.75	53.75
7.2	63.42	60.98	55.63	50.74	50.74	50.74
7.3	60.18	57.87	52.79	48.14	48.14	48.14
7.4	57.37	55.16	50.32	45.90	45.90	45.90
7.5	54.61	52.51	47.90	43.69	43.69	43.69
7.6	52.49	50.47	46.04	41.99	41.99	41.99
7.7	49.38	47.48	43.32	39.50	39.50	39.50
7.8	46.2	44.42	40.53	36.96	36.96	36.96
7.9	42.9	41.25	37.63	34.32	34.32	34.32
8	40.71	39.14	35.71	32.57	32.57	32.57
8.1	38.54	37.06	33.81	30.83	30.83	30.83
8.2	37.29	35.86	32.71	29.83	29.83	29.83
8.3	34.88	33.54	30.60	27.90	27.90	27.90
8.4	33.38	32.10	29.28	26.70	26.70	26.70
8.5	32.08	30.85	28.14	25.66	25.66	25.66
8.6	30.76	29.58	26.98	24.61	24.61	24.61
8.7	29.61	28.47	25.97	23.69	23.69	23.69
8.8	28.8	27.69	25.26	23.04	23.04	23.04
8.9	27.6	26.54	24.21	22.08	22.08	22.08
9	26.45	25.43	23.20	21.16	21.16	21.16
9.1	25.96	24.96	22.77	20.77	20.77	20.77
9.2	25.16	24.19	22.07	20.13	20.13	20.13
9.3	24.41	23.47	21.41	19.53	19.53	19.53
9.4	24.09	23.16	21.13	19.27	19.27	19.27
9.5	23.51	22.61	20.62	18.81	18.81	18.81
9.6	22.7	21.83	19.91	18.16	18.16	18.16
9.7	22.33	21.47	19.59	17.86	17.86	17.86
9.8	22.02	21.17	19.32	17.62	17.62	17.62
9.9	21.29	20.47	18.68	17.03	17.03	17.03
10	20.86	20.06	18.30	16.69	16.69	16.69
10.1	20.15	19.38	17.68	16.12	16.12	16.12
10.2	19.6	18.85	17.19	15.68	15.68	15.68
10.3	19.19	18.45	16.83	15.35	15.35	15.35
10.4	18.52	17.81	16.25	14.82	14.82	14.82
10.5	18.22	17.52	15.98	14.58	14.58	14.58
10.6	17.76	17.08	15.58	14.21	14.21	14.21
10.7	17.28	16.62	15.16	13.82	13.82	13.82
10.8	16.92	16.27	14.84	13.54	13.54	13.54
10.9	16.81	16.16	14.75	13.45	13.45	13.45
11	16.34	15.71	14.33	13.07	13.07	13.07
11.1	16	15.38	14.04	12.80	12.80	12.80

Cross Section 5

Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
13.1	0.00	0.00	0.00	0.00	0.00	0.00
13.2	0.00	0.00	0.00	0.00	0.00	0.00
13.3	0.00	0.00	0.00	0.00	0.00	0.00
13.4	0.01	0.01	0.01	0.01	0.01	0.01
13.6	0.00	0.00	0.00	0.00	0.00	0.00
13.9	0.01	0.01	0.01	0.01	0.01	0.01
14	0.00	0.00	0.00	0.00	0.00	0.00
14.1	0.00	0.00	0.00	0.00	0.00	0.00
14.5	0.00	0.00	0.00	0.00	0.00	0.00
14.8	0.00	0.00	0.00	0.00	0.00	0.00
14.9	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00
15.1	0.00	0.00	0.00	0.00	0.00	0.00
15.3	0.07	0.07	0.06	0.06	0.06	0.06
15.4	0.00	0.00	0.00	0.00	0.00	0.00

Cross Section 6

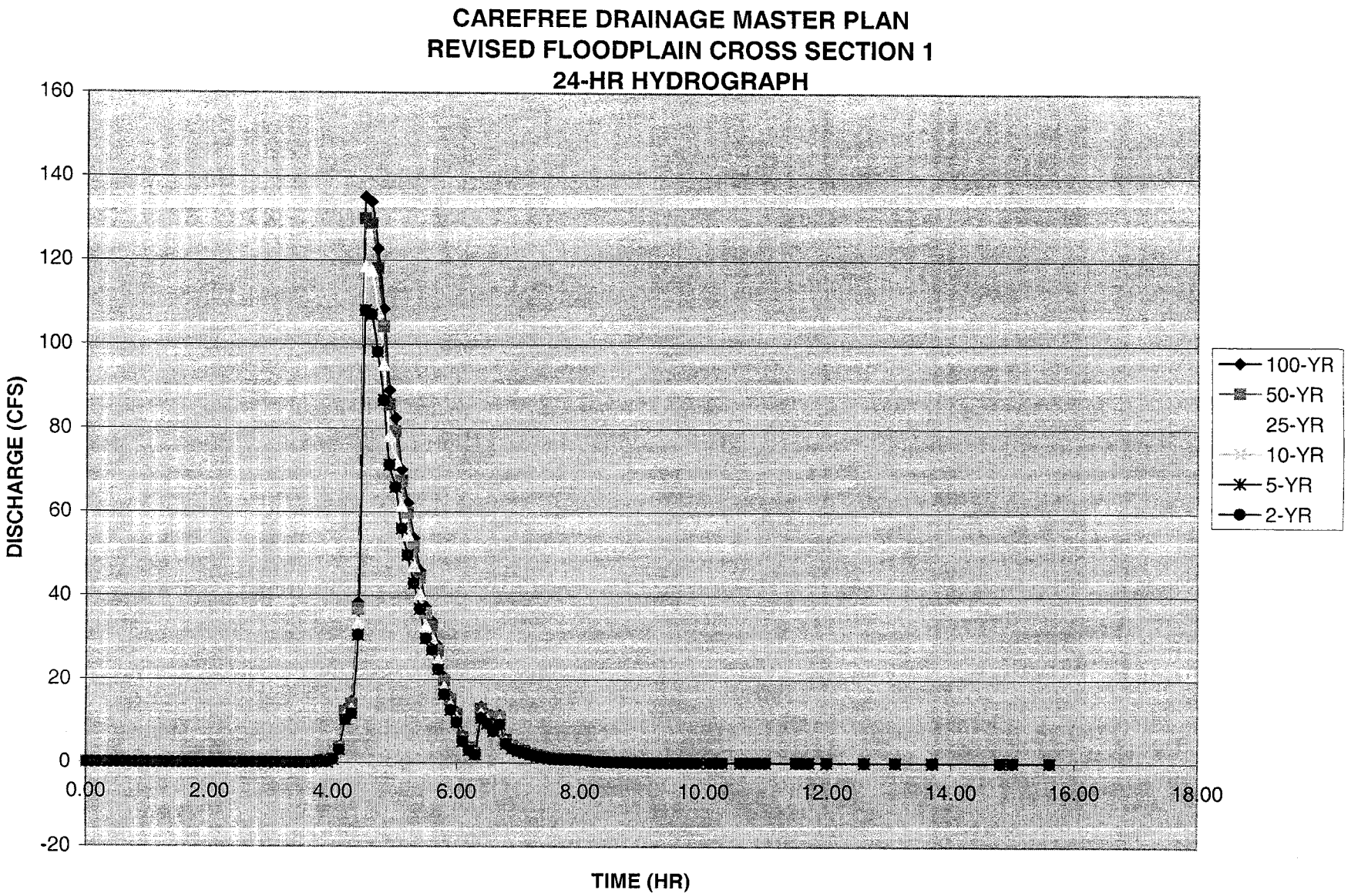
Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
11.2	15.86	15.25	13.91	12.69	12.69	12.69
11.3	15.66	15.06	13.74	12.53	12.53	12.53
11.4	15.57	14.97	13.66	12.46	12.46	12.46
11.5	15.26	14.67	13.39	12.21	12.21	12.21
11.6	14.94	14.37	13.11	11.95	11.95	11.95
11.7	14.65	14.09	12.85	11.72	11.72	11.72
11.8	14.44	13.88	12.67	11.55	11.55	11.55
11.9	14.21	13.66	12.46	11.37	11.37	11.37
12	14.08	13.54	12.35	11.26	11.26	11.26
12.1	13.7	13.17	12.02	10.96	10.96	10.96
12.2	13.42	12.90	11.77	10.74	10.74	10.74
12.3	13.02	12.52	11.42	10.42	10.42	10.42
12.4	12.69	12.20	11.13	10.15	10.15	10.15
12.5	12.44	11.96	10.91	9.95	9.95	9.95
12.6	12.24	11.77	10.74	9.79	9.79	9.79
12.7	12.11	11.64	10.62	9.69	9.69	9.69
12.8	12	11.54	10.53	9.60	9.60	9.60
12.9	11.91	11.45	10.45	9.53	9.53	9.53
13	11.67	11.22	10.24	9.34	9.34	9.34
13.1	11.61	11.16	10.18	9.29	9.29	9.29
13.2	11.38	10.94	9.98	9.10	9.10	9.10
13.3	11.28	10.85	9.89	9.02	9.02	9.02
13.4	11.04	10.62	9.68	8.83	8.83	8.83
13.5	10.94	10.52	9.60	8.75	8.75	8.75
13.6	10.72	10.31	9.40	8.58	8.58	8.58
13.7	10.44	10.04	9.16	8.35	8.35	8.35
13.8	10.16	9.77	8.91	8.13	8.13	8.13
13.9	9.79	9.41	8.59	7.83	7.83	7.83
14	9.67	9.30	8.48	7.74	7.74	7.74
14.1	9.43	9.07	8.27	7.54	7.54	7.54
14.2	9.27	8.91	8.13	7.42	7.42	7.42
14.3	9.04	8.69	7.93	7.23	7.23	7.23
14.4	8.84	8.50	7.75	7.07	7.07	7.07
14.5	8.76	8.42	7.68	7.01	7.01	7.01
14.6	8.62	8.29	7.56	6.90	6.90	6.90
14.7	8.52	8.19	7.47	6.82	6.82	6.82
14.8	8.44	8.12	7.40	6.75	6.75	6.75
14.9	8.37	8.05	7.34	6.70	6.70	6.70
15	8.32	8.00	7.30	6.66	6.66	6.66
15.1	8.24	7.92	7.23	6.59	6.59	6.59
15.2	8.18	7.87	7.18	6.54	6.54	6.54
15.3	8.13	7.82	7.13	6.50	6.50	6.50
15.4	8.08	7.77	7.09	6.46	6.46	6.46
15.5	8	7.69	7.02	6.40	6.40	6.40

Cross Section 5

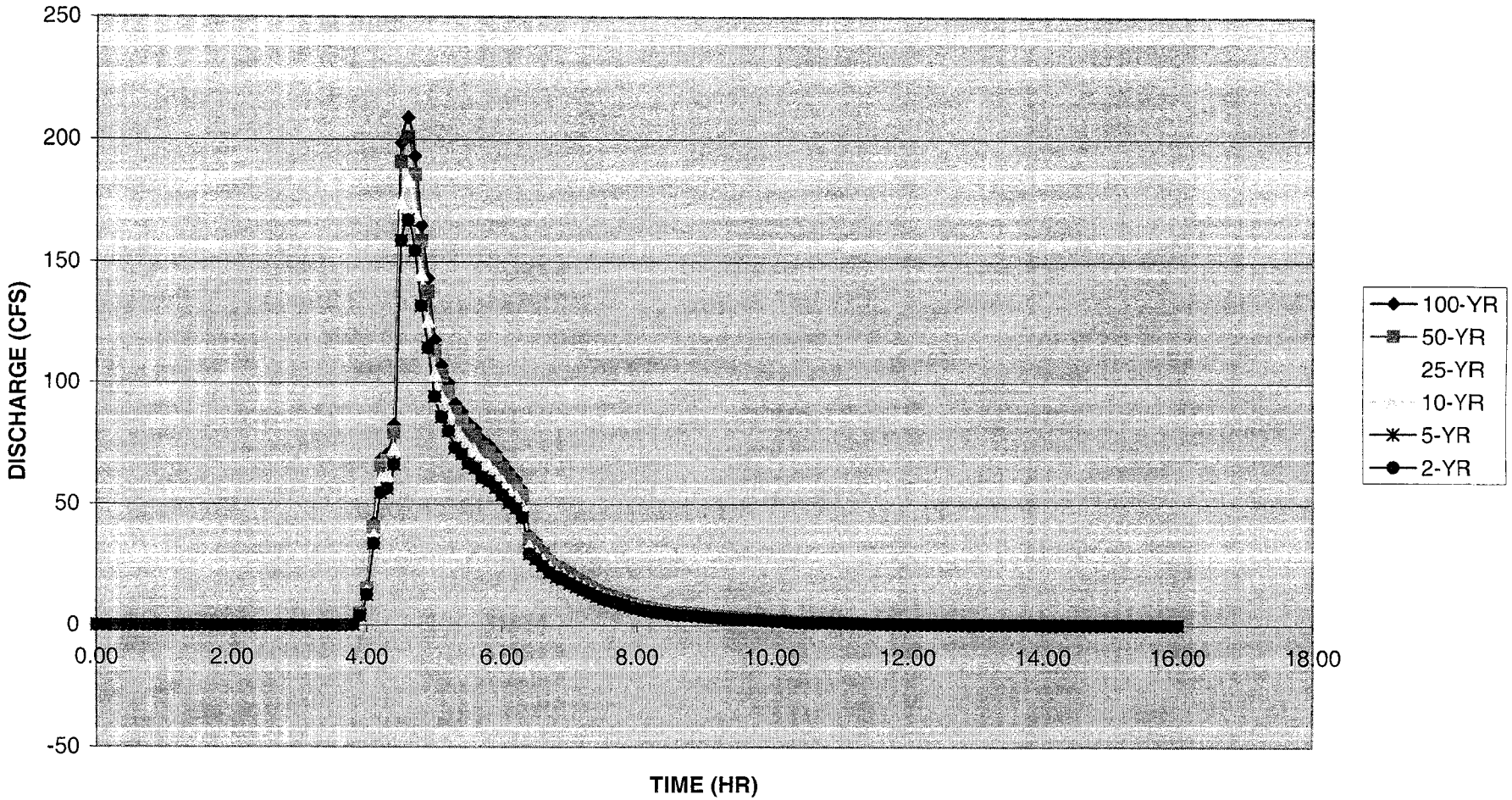
Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr

Cross Section 6

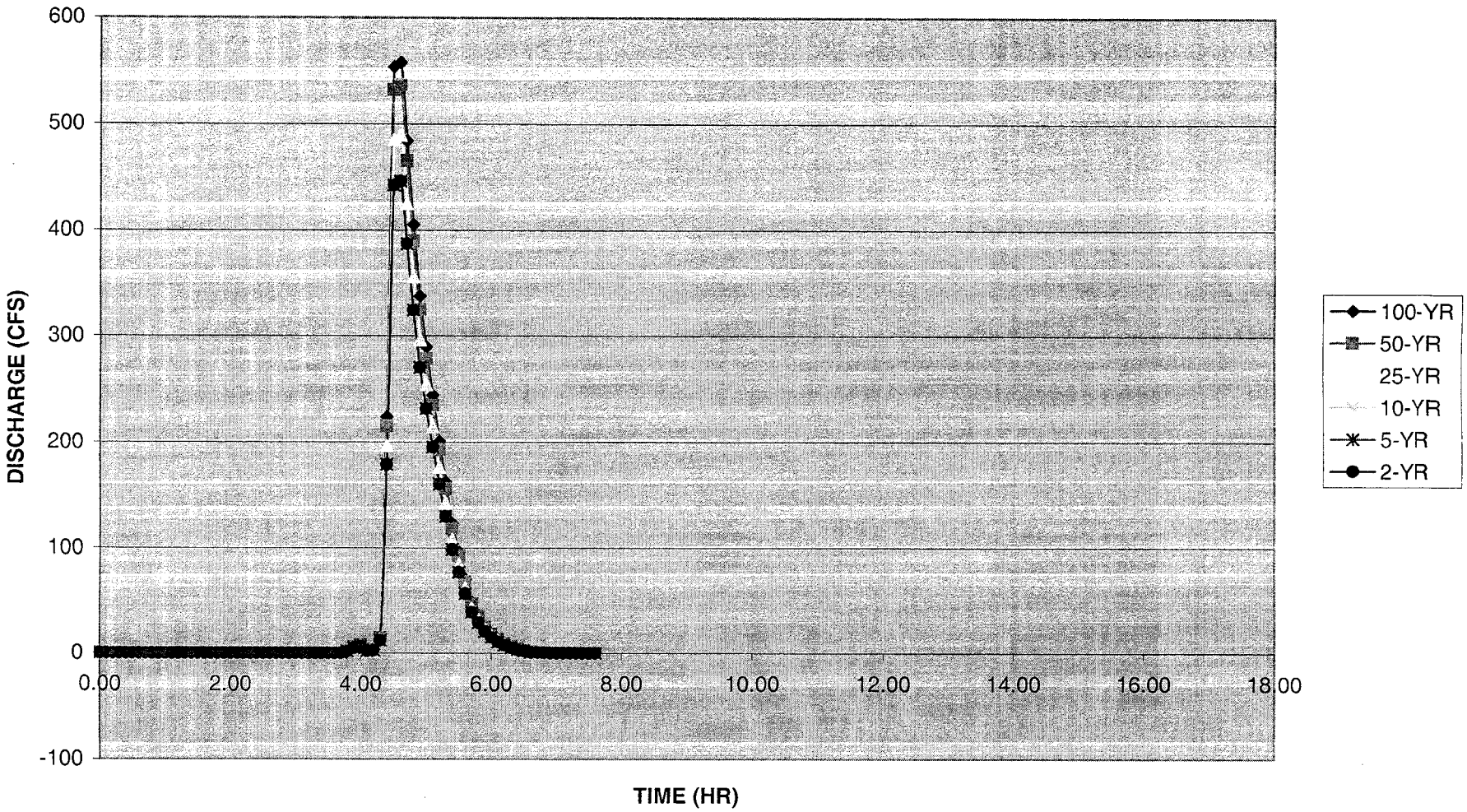
Time (hr)	Discharge (cfs)					
	100-yr	50-yr	25-yr	10-yr	5-yr	2-yr
15.6	7.99	7.68	7.01	6.39	6.39	6.39
15.7	8	7.69	7.02	6.40	6.40	6.40
15.8	8	7.69	7.02	6.40	6.40	6.40
15.9	7.99	7.68	7.01	6.39	6.39	6.39
16	7.96	7.65	6.98	6.37	6.37	6.37


CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 1
24-HR HYDROGRAPH
DISCHARGE (CFS)
160
140
120
100
80
60
40
20
0
-20
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
TIME (HR)
100-YR
50-YR
25-YR
10-YR
5-YR
2-YR

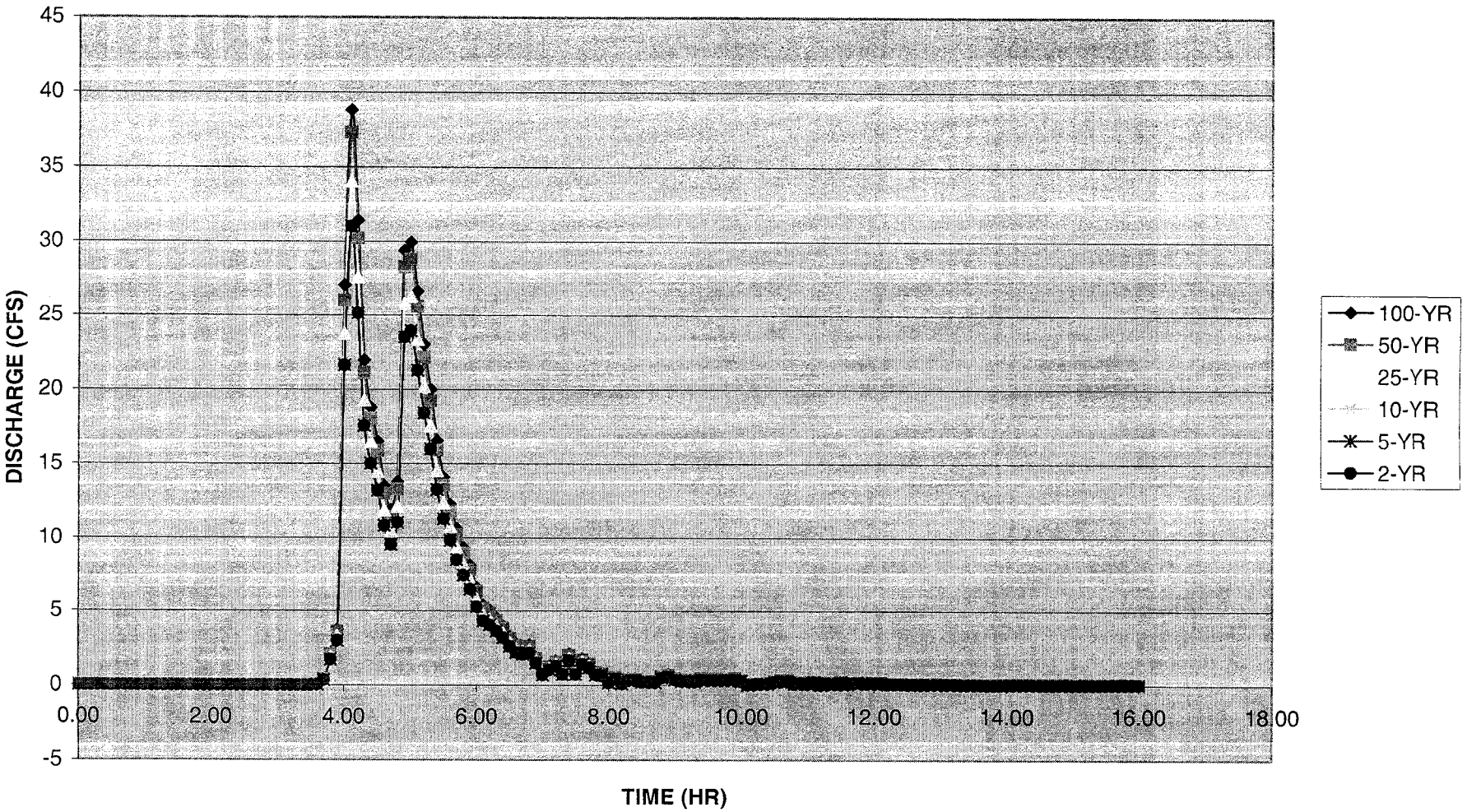
CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 2
24-HR HYDROGRAPH



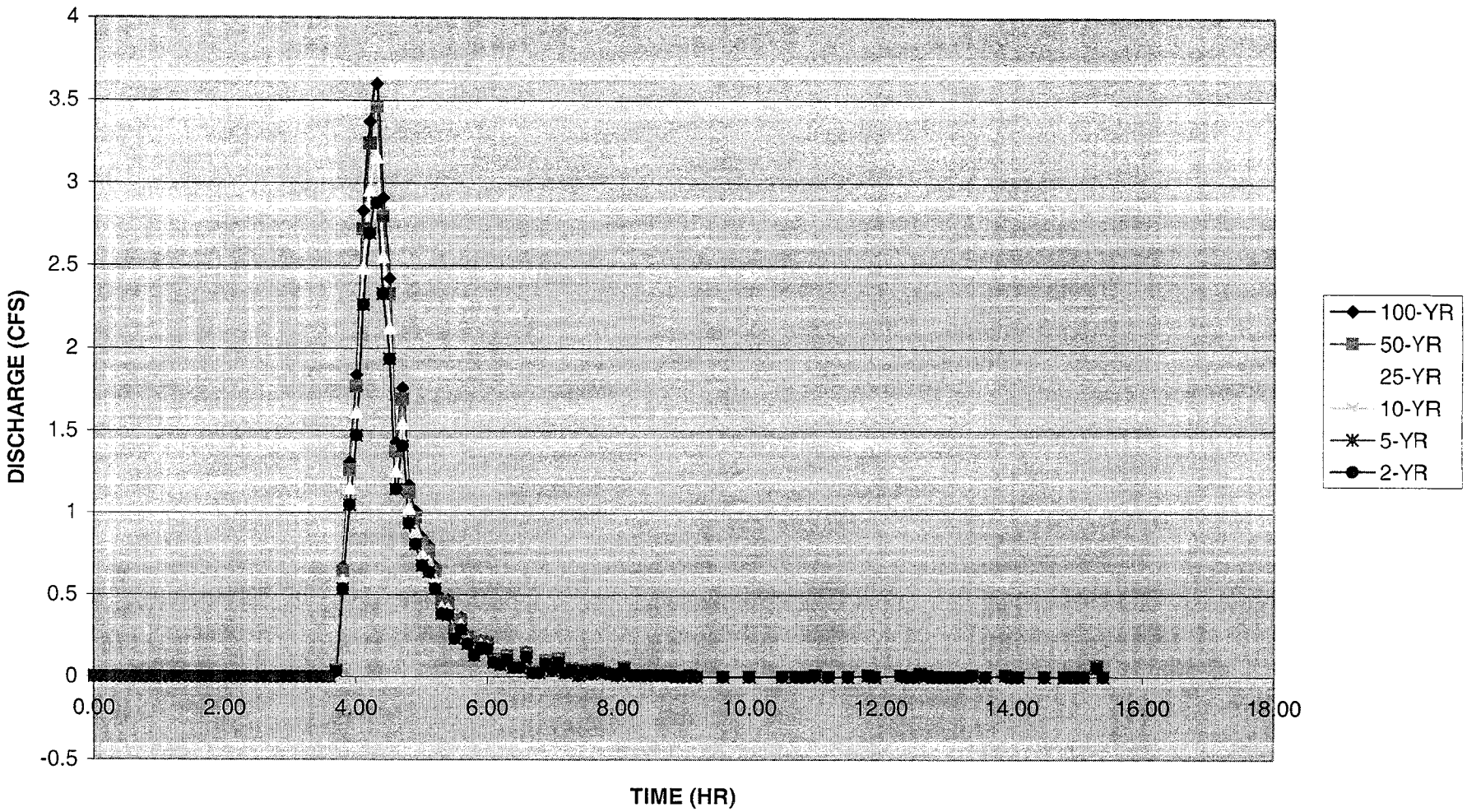
CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 3
24-HR HYDROGRAPH



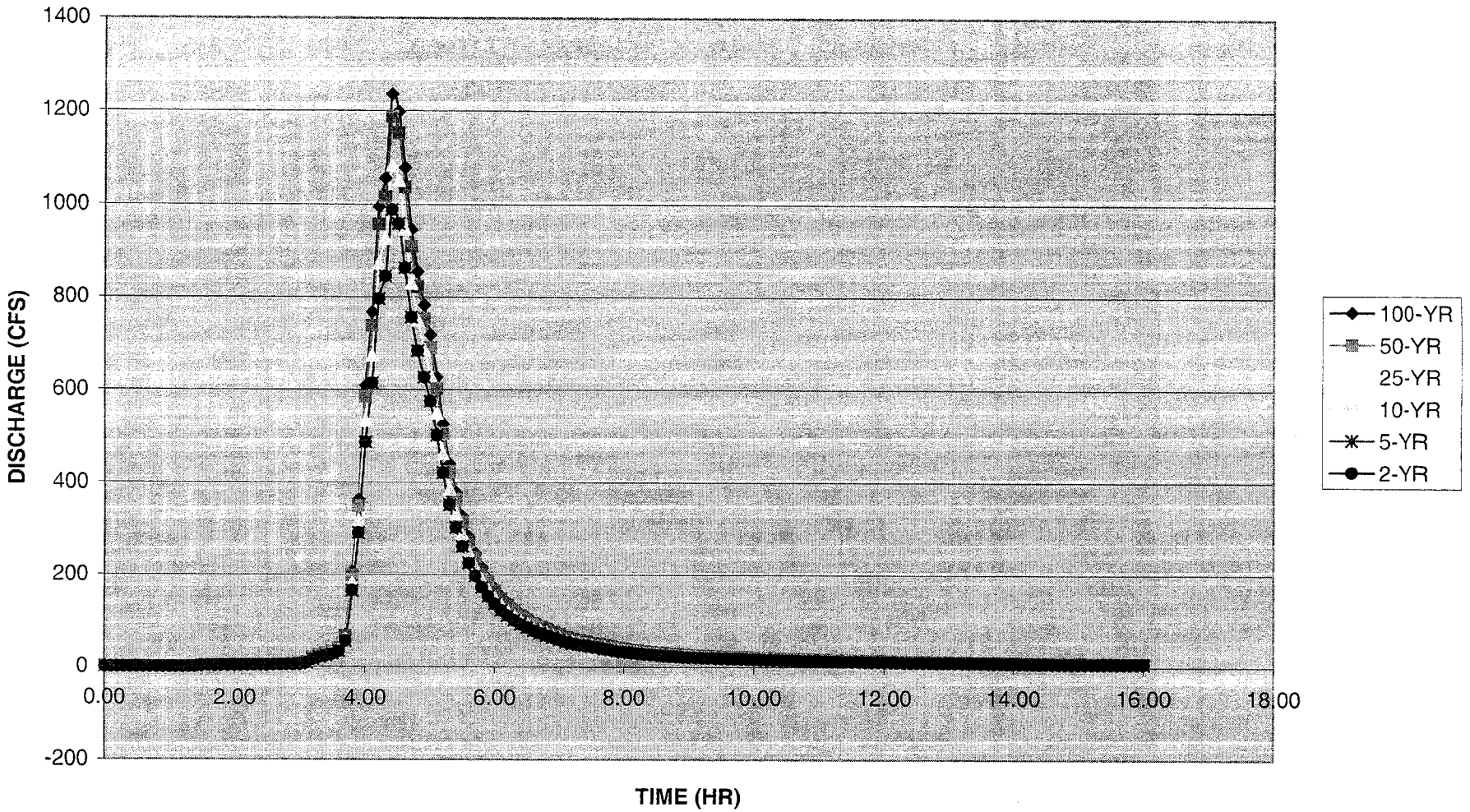
CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 4
24-HR HYDROGRAPH



CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 5
24-HR HYDROGRAPH



CAREFREE DRAINAGE MASTER PLAN
REVISED FLOODPLAIN CROSS SECTION 6
24-HR HYDROGRAPH



Job No.	40933	No.	40933

Computation

HDR

Project:	Cave Creek Drainage Master Plan	Computed:	JNG	Date	7/1/2007
Subject:	Hydrology	Checked:	EC	Date	7/2/2007
Task:	Sub-Basin Data	Sheet	1 of 1		

Sub-Basin	Area (acres)	Area (mi^2)	Flowpath (ft)	Flowpath (mi)	Route (ft)	Route (mi)	High El (ft)	Low El (ft)	Slope (ft/ft)	Slope (ft/mi)	LCA (ft)	LCA (mi)	Basin Factor [1]
SUB12A	57.11	0.089	4040.95	0.765			2516	2112	0.100	527.88	55.90	0.01	0.000
SUB-13	346.21	0.541	6625.13	1.255	2572.29	0.4872	2502	2172	0.050	263.00	220.00	0.04	0.003
SUB14A	115.17	0.180	5133.25	0.972	4115.61	0.7795	2444	2219	0.044	231.43	559.10	0.11	0.007
SUB14B	171.04	0.267	7945.98	1.505	3269.56	0.6192	2550	2260	0.036	192.70	275.30	0.05	0.006
SUB14C	293.40	0.458	9196.05	1.742	3269.56	0.6192	2876	2260	0.067	353.68	187.70	0.04	0.003
SUB-18	246.55	0.385	7747.69	1.467	2572.29	0.4872	2628	2173	0.059	310.08	901.76	0.17	0.014
SUB19A	70.76	0.111	4527.22	0.857	4115.61	0.7795	2534	2219	0.070	367.38	344.78	0.07	0.003
SUB19B	164.29	0.257	7184.77	1.361	4115.61	0.7795	3060	2219	0.117	618.04	314.67	0.06	0.003
SUB19C	66.95	0.105	4440.50	0.841	4115.61	0.7795	2598	2219	0.085	450.65	100.30	0.02	0.001
SUB-23	334.48	0.523	7812.39	1.480			2306	1967	0.043	229.11	14.06	0.00	0.000
SUB-24	170.57	0.267	6782.39	1.285			2552	1956	0.088	463.98	453.74	0.09	0.005
SUB-25	599.71	0.937	11781.55	2.231			2430	1926	0.043	225.87	631.53	0.12	0.018
SUB33A	35.34	0.055	1957.09	0.371			2290	2150	0.072	377.70	293.67	0.06	0.001
SUB33B	99.20	0.155	4902.47	0.928	1320.10	0.2500	2524	2171	0.072	380.18	196.50	0.04	0.002
SUB33C	17.87	0.028	2132.19	0.404	1320.10	0.2500	2222	2171	0.024	126.29	210.90	0.04	0.001
SUB33D	22.71	0.035	3154.05	0.597	1637.44	0.3101	2222	2188	0.011	56.92	18.67	0.00	0.000
SUB33E	124.23	0.194	4824.55	0.914	1637.44	0.3101	2438	2188	0.052	273.60	67.20	0.01	0.001
SUB33F	13.46	0.021	1734.30	0.328	477.25	0.0904	2268	2196	0.042	219.20	37.70	0.01	0.000
SUB-45	56.58	0.088	5686.88	1.077	4897.60	0.9276	2473	2246	0.040	210.76	69.68	0.01	0.001
SUB46A	20.56	0.032	2544.91	0.482	4897.60	0.9276	2376	2246	0.051	269.71	132.70	0.03	0.001
SUB46B	19.85	0.031	2929.30	0.555	563.88	0.1068	2403	2268	0.046	243.33	107.70	0.02	0.001
SUB-47	113.80	0.178	5404.69	1.024			2297	2139	0.029	154.35	242.82	0.05	0.004
SUB-50	141.05	0.220	4759.29	0.901			2220	1958	0.055	290.67	736.39	0.14	0.007
SUB-51	161.61	0.253	8362.57	1.584			2344	1906	0.052	276.55	227.75	0.04	0.004
SUB-54	59.99	0.094	4112.99	0.779			2012	1920	0.022	118.10	298.82	0.06	0.004
SUB-57	42.43	0.066	2429.79	0.460	2609.49	0.4942	2424	2000	0.175	921.36	139.00	0.03	0.000
SUB-58	70.82	0.111	3813.14	0.722	454.70	0.0861	2254	1968	0.075	396.02	280.35	0.05	0.002
SUB-59	52.78	0.082	5876.79	1.113	419.68	0.0795	2075	1962	0.019	101.52	239.10	0.05	0.005
SUB-60	58.80	0.092	5295.14	1.003	419.68	0.0795	2075	1962	0.021	112.68	239.78	0.05	0.004
SUB-61	90.97	0.142	7388.85	1.399	780.14	0.1478	2123	1956	0.023	119.34	180.11	0.03	0.004

Sub-Basin	Area (acres)	Area (mi^2)	Flowpath (ft)	Flowpath (mi)	Route (ft)	Route (mi)	High El (ft)	Low El (ft)	Slope (ft/ft)	Slope (ft/mi)	LCA (ft)	LCA (mi)	Basin Factor [1]
SUB-62	63.00	0.098	4567.92	0.865	2145.21	0.4063	2049	1948	0.022	116.74	185.29	0.04	0.003
SUB-63	52.27	0.082	4567.92	0.865	2145.21	0.4063	2049	1944	0.023	121.37	11.98	0.00	0.000
SUB-64	45.24	0.071	4273.48	0.809			1996.5	1906	0.021	111.82	199.21	0.04	0.003
SUB-65	117.85	0.184	5966.02	1.130	4576.14	0.8667	2055	1936	0.020	105.32	83.53	0.02	0.002
SUB-66	117.07	0.183	5966.02	1.130			1965	1876	0.015	78.77	655.74	0.12	0.016
SUB-68	78.53	0.123	5448.72	1.032			1980	1876	0.019	100.78	76.70	0.01	0.001
SUB-69	301.46	0.471	8481.38	1.606	2609.49	0.4942	3400	2000	0.165	871.56	441.80	0.08	0.005
SUB-70	46.13	0.072	4478.20	0.848	402.74	0.0763	3400	2098	0.291	1535.12	199.04	0.04	0.001
SUB-71	22.09	0.035	2176.10	0.412	3491.79	0.6613	2428	2076	0.162	854.08	246.45	0.05	0.001
SUB-72	99.26	0.155	5036.14	0.954	3491.79	0.6613	3400	2076	0.263	1388.11	137.40	0.03	0.001
SUB-73	35.66	0.056	2746.30	0.520	1412.07	0.2674	2458	2106	0.128	676.75	89.80	0.02	0.000
SUB-74	99.95	0.156	4896.35	0.927	1412.07	0.2674	3180	2110	0.219	1153.84	135.40	0.03	0.001
SUB-75	10.48	0.016	1795.03	0.340	919.42	0.1741	2450	2120	0.184	970.68	37.40	0.01	0.000
SUB-76	12.98	0.020	1773.33	0.336	919.42	0.1741	2268	2120	0.083	440.66	13.20	0.00	0.000

[1] Based on USBR (See DDM Hydrology 5-29, 4-18, 4-19 & 5-32)

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
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Sub-Basin SUB12A Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
8	0.06	0.0001	A
26	0.62	0.0010	C
33	0.00	0.0000	C
34	0.00	0.0000	C
66	18.23	0.0285	D
72	38.21	0.0597	D
Summation =	57.11	0.0893	

Sub-Basin SUB-13 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	48.58	0.0759	C
34	76.04	0.1188	C
66	156.45	0.2445	D
72	48.65	0.0760	D
93	16.50	0.0258	B/D
Summation =	346.21	0.5410	

Sub-Basin SUB14A Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	38.73	0.0605	C
33	6.82	0.0107	C
34	2.62	0.0041	C
66	45.31	0.0708	D
72	13.22	0.0207	D
93	7.62	0.0119	B/D
95	0.84	0.0013	C
Summation =	115.17	0.1800	

Sub-Basin SUB14B Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	24.41	0.0381	C
33	0.00	0.0000	C
34	0.00	0.0000	C
66	104.60	0.1634	D

72	0.38	0.0006	D
93	0.00	0.0000	B/D
95	41.65	0.0651	C
Summation =	171.04	0.2672	

Sub-Basin SUB14C Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	48.90	0.0764	C
33	0.00	0.0000	C
34	0.05	0.0001	C
66	145.64	0.2276	D
72	9.98	0.0156	D
93	0.00	0.0000	B/D
95	88.84	0.1388	C
Summation =	293.40	0.4585	

Sub-Basin SUB-18 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
66	1.33	0.0021	D
72	245.22	0.3832	D
Summation =	246.55	0.3853	

Sub-Basin SUB19A Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	10.22	0.0160	C
66	15.49	0.0242	D
72	45.05	0.0704	D
Summation =	70.76	0.1106	

Sub-Basin SUB19B Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	0.00	0.0000	C
66	8.19	0.0128	D
72	156.10	0.2439	D
Summation =	164.29	0.2567	

Sub-Basin SUB19C Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	0.00	0.0000	C
66	0.07	0.0001	D
72	66.88	0.1045	D
Summation =	66.95	0.1046	

Sub-Basin SUB-23 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
8	7.54	0.0118	A
33	12.34	0.0193	C
72	314.60	0.4916	D
Summation =	334.48	0.5227	

Sub-Basin SUB-24 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
8	7.34	0.0115	A
33	4.16	0.0065	C
72	158.56	0.2478	D
121	0.50	0.0008	B
Summation =	170.57	0.2666	

Sub-Basin SUB-25 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
3	18.05	0.0282	B/A/B
33	4.12	0.0064	C
72	547.70	0.8558	D
93	7.32	0.0114	B/D
96	5.06	0.0079	B
121	17.46	0.0273	B
Summation =	599.71	0.9370	

Sub-Basin SUB33A Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	7.93	0.0124	C
31	0.00	0.0000	D
34	8.59	0.0134	C
66	15.08	0.0236	D
72	3.73	0.0058	D
Summation =	35.34	0.0552	

Sub-Basin SUB33B Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	30.14	0.0471	C
31	0.88	0.0014	D
34	14.87	0.0232	C
66	53.31	0.0833	D
72	0.00	0.0000	D
Summation =	99.20	0.1550	

Sub-Basin SUB33C Soil Numbering [5]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	11.81	0.0185	C
31	0.00	0.0000	D
34	0.31	0.0005	C
66	5.75	0.0090	D
72	0.00	0.0000	D
Summation =	17.87	0.0280	

Sub-Basin SUB33D Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	2.58	0.0040	C
31	1.51	0.0024	D
34	0.00	0.0000	C
66	18.62	0.0291	D
72	0.00	0.0000	D
Summation =	22.71	0.0355	

Sub-Basin SUB33E Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	20.22	0.0316	C
31	50.67	0.0792	D
34	0.00	0.0000	C
66	7.53	0.0118	D
72	45.82	0.0716	D
Summation =	124.23	0.1942	

Sub-Basin SUB33F Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	3.22	0.0050	C
31	0.00	0.0000	D
34	0.00	0.0000	C
66	10.24	0.0160	D
72	0.00	0.0000	D
Summation =	13.46	0.0210	

Sub-Basin SUB-45 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	31.48	0.0492	C

34	25.10	0.0392	C
Summation =	56.58	0.0884	

Sub-Basin SUB46A Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	5.47	0.0086	C
34	15.09	0.0236	C
Summation =	20.56	0.0322	

Sub-Basin SUB46B Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
26	5.02	0.0079	C
34	14.82	0.0232	C
Summation =	19.85	0.0311	

Sub-Basin SUB-47 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	0.01	0.0000	B/A
26	9.90	0.0155	C
34	76.90	0.1202	C
93	27.00	0.0422	B/D
Summation =	113.80	0.1779	

Sub-Basin SUB-50 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
8	7.71	0.0121	A
33	24.24	0.0379	C
72	109.10	0.1705	D
Summation =	141.05	0.2205	

Sub-Basin SUB-51 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
3	43.47	0.0679	B/A/B
8	4.25	0.0066	A
33	83.47	0.1304	C
72	19.21	0.0300	D
121	1.70	0.0027	B
12	9.50	0.0148	B
Summation =	161.61	0.2376	

Sub-Basin SUB-54 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]

3	13.35	0.0209	B/A/B
12	43.87	0.0685	D
33	2.78	0.0043	C
Summation =	59.99	0.0937	

Sub-Basin SUB-57 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	0.73	0.0011	B/A
33	23.47	0.0367	C
72	18.23	0.0285	D
Summation =	42.43	0.0663	

Sub-Basin SUB-58 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	7.22	0.0113	B/A
12	5.39	0.0084	D
33	55.92	0.0874	C
72	2.29	0.0036	D
Summation =	70.82	0.1107	

Sub-Basin SUB-59 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	29.04	0.0454	B/A
12	1.34	0.0021	D
33	1.03	0.0016	C
96	21.37	0.0334	B
Summation =	52.78	0.0825	

Sub-Basin SUB-60 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	9.80	0.0153	B/A
96	49.00	0.0766	B
Summation =	58.80	0.0919	

Sub-Basin SUB-61 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	3.34	0.0052	B/A
12	0.23	0.0004	D
33	0.11	0.0002	C
96	87.30	0.1364	B
Summation =	90.97	0.1422	

Sub-Basin SUB-62 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]

3	2.00	0.0031	B/A/B
6	3.40	0.0053	B/A
12	0.53	0.0008	D
96	57.00	0.0891	B
Summation =	63.00	0.0983	

Sub-Basin SUB-63 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
3	0.42	0.0007	B/A/B
96	51.66	0.0807	B
110	0.18	0.0003	D
Summation =	52.27	0.0817	

Sub-Basin SUB-64 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
3	20.91	0.0327	B/A/B
12	14.64	0.0229	D
44	5.62	0.0088	C
96	0.64	0.0010	B
110	3.43	0.0054	D
Summation =	45.24	0.0707	

Sub-Basin SUB-65 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
12	0.60	0.0009	D
44	7.08	0.0111	C
96	100.54	0.1571	B
110	9.64	0.0151	D
Summation =	117.85	0.1842	

Sub-Basin SUB-66 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
3	23.63	0.0369	B/A/B
12	27.83	0.0435	D
44	51.91	0.0811	C
96	0.00	0.0000	B
98	7.26	0.0113	B
110	6.43	0.0101	D
Summation =	117.07	0.1829	

Sub-Basin SUB-68 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
12	28.03	0.0438	D
44	28.09	0.0439	C
96	13.26	0.0207	B

98	3.35	0.0052	B
110	5.81	0.0091	D
Summation =	78.53	0.1227	

Sub-Basin SUB-69 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
6	20.86	0.0326	B/A
33	125.11	0.1955	C
72	155.49	0.2429	D
Summation =	301.46	0.4710	

Sub-Basin SUB-70 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	12.20	0.0191	C
72	33.93	0.0530	D
Summation =	46.13	0.0721	

Sub-Basin SUB-71 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	7.41	0.0116	C
72	14.68	0.0229	D
Summation =	22.09	0.0345	

Sub-Basin SUB-72 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	33.07	0.0517	C
72	66.19	0.1034	D
Summation =	99.26	0.1551	

Sub-Basin SUB-73 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	10.18	0.0159	C
72	25.47	0.0398	D
Summation =	35.66	0.0557	

Sub-Basin SUB-74 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	23.33	0.0365	C
72	76.62	0.1197	D
Summation =	99.95	0.1562	

Sub-Basin SUB-75 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]

33	5.80	0.0091	C
72	4.68	0.0073	D
Summation =	10.48	0.0164	

Sub-Basin SUB-76 Soil Numbering [2]	Area (AC)	Area (mi^2)	Hydrologic Group [2]
33	11.51	0.0180	C
72	1.48	0.0023	D
Summation =	12.98	0.0203	

No. 40933

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	JNG
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Existing Land Use

Sub-Basin SUB12A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	6.36	0.0099
DL2	Desert	50.75	0.0793
Summation =		57.11	0.0892

Sub-Basin SUB-13 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	4.65	0.0073
DL2	Desert	341.57	0.5337
Summation =		346.21	0.5410

Sub-Basin SUB14A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	115.17	0.18000
Summation =		115.17	0.18000

Sub-Basin SUB14B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	171.04	0.2673
Summation =		171.04	0.2673

Future Land Use

Sub-Basin SUB12A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	57.11	0.0892
Summation =		57.11	0.0892

Sub-Basin SUB-13 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	32.71	0.0511
DR-190	VLDR	233.78	0.3650
R-190	VLDR	79.72	0.1250
Summation =		346.21	0.5411

Sub-Basin SUB14A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	111.29	0.174
DR-43	VLDR	3.88	0.006
Summation =		115.17	0.1799

Sub-Basin SUB14B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	101.63	0.1588
DR-190	VLDR	69.40	0.1084
Summation =		171.04	0.2672

Sub-Basin SUB14C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	293.40	0.4584
Summation =		293.40	0.4584

Sub-Basin SUB14C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	114.66	0.1792
DR-190	VLDR	178.74	0.2793
Summation =		293.40	0.4585

Sub-Basin SUB-18 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
CCREC	Desert	52.91	0.0827
DL2	Desert	193.65	0.3026
Summation =		246.55	0.3853

Sub-Basin SUB-18 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
CCREC	Desert	52.91	0.0827
DR-190	VLDR	193.65	0.3026
Summation =		246.55	0.3853

Sub-Basin SUB19A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	70.76	0.1106
Summation =		70.76	0.1106

Sub-Basin SUB19A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	70.76	0.1106
Summation =		70.76	0.1106

Sub-Basin SUB19B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	91.41	0.1428
CCREC	Desert	72.87	0.1139
Summation =		164.29	0.2567

Sub-Basin SUB19B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	91.41	0.1428
CCREC	Desert	72.87	0.1139
Summation =		164.29	0.2567

Sub-Basin SUB19C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DL2	Desert	62.14	0.0971
CCREC	Desert	4.80	0.0075
Summation =		66.95	0.1046

Sub-Basin SUB19C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	62.14	0.0971
CCREC	Desert	4.80	0.0075
Summation =		66.95	0.1046

Sub-Basin SUB-23 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	259.04	0.4048
CCREC	Desert	75.44	0.1179
Summation =		334.48	0.5227

Sub-Basin SUB-23 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	259.04	0.4048
CCREC	Desert	75.44	0.1179
Summation =		334.48	0.5227

Sub-Basin SUB-24 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	14.90	0.0233
CCREC	Desert	77.20	0.1206
DL2	Desert	78.46	0.1226
Summation =		170.57	0.2665

Sub-Basin SUB-24 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	93.36	0.1459
CCREC	Desert	77.20	0.1206
Summation =		170.57	0.2665

Sub-Basin SUB-25 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	37.41	0.0585
CCREC	DESERT	511.38	0.7990
DL2	DESERT	50.91	0.0795
Summation =		599.71	0.9370

Sub-Basin SUB-25 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	10.35	0.0162
DR-190	VLDR	77.97	0.1218
CCREC	Desert	511.38	0.7990
Summation =		599.71	0.9370

Sub-Basin SUB33A Zoning Numbering [5]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	18.74	0.0293
DR-190	VLDR	7.98	0.0125
DL2	Desert	8.62	0.0135
Summation =		35.34	0.0553

Sub-Basin SUB33A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	25.68	0.0401
DR-190	VLDR	9.66	0.0151
Summation =		35.34	0.0552

Sub-Basin SUB33B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	26.90	0.0420
DR-190	VLDR	31.97	0.0500
DL2	Desert	40.32	0.0630
Summation =		99.20	0.1550

Sub-Basin SUB33B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	62.58	0.0978
DR-190	VLDR	36.61	0.0572
Summation =		99.20	0.1550

Sub-Basin SUB33C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	14.66	0.0229
DL2	Desert	3.21	0.0050
Summation =		17.87	0.0279

Sub-Basin SUB33C Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	17.87	0.0279
Summation =		17.87	0.0279

Sub-Basin SUB33D Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	2.83	0.0044
DR-190	VLDR	8.47	0.0132

Sub-Basin SUB33D Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	2.83	0.0044
DR-190	VLDR	19.88	0.0311

DL2	Desert	11.41	0.0178
Summation =		22.71	0.0354

Summation =		22.71	0.0355

Sub-Basin SUB33E Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	7.68	0.0120
DR-70	VLDR	10.45	0.0163
DL2	Desert	106.10	0.1658
Summation =		124.23	0.1941

Sub-Basin SUB33E Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	13.68	0.0214
R-190	VLDR	87.58	0.1368
DR-190	VLDR	11.13	0.0174
DR-43	VLDR	11.84	0.0185
Summation =		124.23	0.1941

Sub-Basin SUB33F Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	8.49	0.0133
DR-70	VLDR	2.55	0.0040
DL2	Desert	2.42	0.0038
Summation =		13.46	0.0211

Sub-Basin SUB33F Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-70	VLDR	2.55	0.0040
DR-190	VLDR	10.91	0.0170
Summation =		13.46	0.0210

Sub-Basin SUB-45 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	5.82	0.0091
DL2	Desert	50.76	0.0793
Summation =		56.58	0.0884

Sub-Basin SUB-45 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	56.58	0.0884
Summation =		56.58	0.0884

Sub-Basin SUB46A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	4.20	0.0066
DL2	Desert	16.37	0.0256
Summation =		20.56	0.0322

Sub-Basin SUB46A Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	20.56	0.0321
Summation =		20.56	0.0321

Sub-Basin SUB46B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR190	VLDR	2.31	0.0036
DL2	Desert	17.54	0.0274
Summation =		19.85	0.0310

Sub-Basin SUB46B Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	19.85	0.0310
R-70	VLDR	0.00	0.0000
Summation =		19.85	0.0310

Sub-Basin SUB-47 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)

Sub-Basin SUB-47 Zoning Numbering [5]	DDMS Land Use Classification	Area (AC)	Area (mi^2)

DR-89	VLDR	78.16	0.1221
DL2	Desert	35.64	0.0557
Summation =		113.80	0.1778

DR-89	VLDR	102.06	0.1595
DR-190	VLDR	11.74	0.0183
Summation =		113.80	0.1778

Sub-Basin SUB-50 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	12.17	0.0190
DL2	DESERT	128.89	0.2014
Summation =		141.05	0.2204

Sub-Basin SUB-50 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-18	LDR	0.42	0.0007
R-35	LDR	1.22	0.0019
DR-43	VLDR	0.52	0.0008
DR-190	VLDR	138.89	0.2170
Summation =		141.05	0.2204

Sub-Basin SUB-51 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	31.30	0.0489
DR-190	VLDR	34.77	0.0543
Desert	Desert	95.54	0.1493
Summation =		161.61	0.2525

Sub-Basin SUB-51 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-190	VLDR	121.84	0.1904
DR-89	VLDR	39.77	0.0621
Summation =		161.61	0.2525

Sub-Basin SUB-54 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	55.57	0.0868
Desert	Desert	4.43	0.0069
Summation =		59.99	0.0937

Sub-Basin SUB-54 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	59.99	0.0937
Summation =		59.99	0.0937

Sub-Basin SUB-57 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	16.98	0.0265
DESERT	DESERT	25.44	0.0398
Summation =		42.43	0.0663

Sub-Basin SUB-57 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	6.83	0.0107
DR-89	VLDR	12.87	0.0201
DR-190	VLDR	22.72	0.0355
Summation =		42.43	0.0663

Sub-Basin SUB-58 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	23.92	0.0374
DESERT	DESERT	46.91	0.0733
Summation =		70.82	0.1107

Sub-Basin SUB-58 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	56.13	0.0877
DR-190	VLDR	14.69	0.0230
Summation =		70.82	0.1107

Sub-Basin SUB-59 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DESERT	DESERT	9.18	0.0144
DR-89	VLDR	12.23	0.0191
R-35	LDR	31.36	0.0490
Summation =		52.78	0.0825

Sub-Basin SUB-59 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	23.65	0.0369
R-35	LDR	29.13	0.0455
Summation =		52.78	0.0825

Sub-Basin SUB-60 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	2.01	0.0031
DESERT	DESERT	23.12	0.0361
R-35	LDR	33.67	0.0526
Summation =		58.80	0.0918

Sub-Basin SUB-60 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-35	LDR	33.13	0.0518
DR-89	VLDR	25.67	0.0401
Summation =		58.80	0.0919

Sub-Basin SUB-61 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	20.58	0.0322
Desert	Desert	11.41	0.0178
R-35	LDR	58.98	0.0922
S-R/C-T	COMM	0.06	0.0001
Summation =		90.97	0.1422

Sub-Basin SUB-61 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-35	LDR	58.98	0.0922
DR-89	VLDR	31.92	0.0499
S-R/C-T	Comm	0.06	0.0001
Summation =		90.97	0.1422

Sub-Basin SUB-62 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	26.14	0.0408
R-35	LDR	9.45	0.0148
DESERT	DESERT	27.40	0.0428
Summation =		63.00	0.0984

Sub-Basin SUB-62 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	41.75	0.0652
C-C	COMM	11.69	0.0183
R-35	LDR	9.55	0.0149
Summation =		63.00	0.0984

Sub-Basin SUB-63 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	41.67	0.0651
C-C	COMM	0.42	0.0007
DESERT	DESERT	10.18	0.0159
Summation =		52.27	0.0817

Sub-Basin SUB-63 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	44.33	0.0693
C-C	COMM	7.94	0.0124
Summation =		52.27	0.0817

Sub-Basin SUB-64 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)

Sub-Basin SUB-64 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)

DR-89	VLDR	37.98	0.0593
Desert	Desert	7.15	0.0112
DR-43	VLDR	0.10	0.0002
Summation =		45.24	0.0707

DR-43	VLDR	0.10	0.0002
DR-89	VLDR	39.95	0.0624
DR-190	VLDR	0.14	0.0002
DR-190	VLDR	5.05	0.0079
Summation =		45.24	0.0707

Sub-Basin SUB-65 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	80.93	0.1265
R-35	LDR	2.01	0.0031
C-C	Comm	3.91	0.0061
DESERT	DESERT	31.01	0.0484
Summation =		117.85	0.1841

Sub-Basin SUB-65 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-89	VLDR	111.87	0.1748
R-35	LDR	2.16	0.0034
C-C	Comm	3.82	0.0060
Summation =		117.85	0.1842

Sub-Basin SUB-66 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DESERT	DESERT	68.13	0.1065
DR-43	VLDR	36.53	0.0571
DR-89	VLDR	12.40	0.0194
Summation =		117.07	0.1830

Sub-Basin SUB-66 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	46.28	0.0723
DR-89	VLDR	70.79	0.1106
Summation =		117.07	0.1829

Sub-Basin SUB-68 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	32.06	0.0501
DR-89	VLDR	13.95	0.0218
Desert	Desert	32.52	0.0508
Summation =		78.53	0.1227

Sub-Basin SUB-68 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	32.95	0.0515
DR-89	VLDR	44.84	0.0701
C-C	Comm	0.74	0.0012
Summation =		78.53	0.1228

Sub-Basin SUB-69 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	31.57	0.0493
DR-89	VLDR	8.84	0.0138
DR-190	VLDR	0.68	0.0011
R-35	LDR	133.55	0.2087
Desert	DESERT	126.81	0.1981
Summation =		301.46	0.4710

Sub-Basin SUB-69 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	70.36	0.1099
DR-89	VLDR	13.96	0.0218
DR-190	VLDR	3.23	0.0050
R-35	LDR	133.55	0.2087
R-70	VLDR	26.41	0.0413
R-190	VLDR	53.95	0.0843
Summation =		301.46	0.4710

Sub-Basin SUB-70 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	3.74	0.0058
R-35	LDR	6.59	0.0103
DESERT	DESERT	35.81	0.0559
Summation =		46.13	0.0720

Sub-Basin SUB-70 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	29.65	0.0463
DR-89	VLDR	5.86	0.0092
R-35	LDR	6.59	0.0103
R-190	VLDR	4.03	0.0063
Summation =		46.13	0.0721

Sub-Basin SUB-71 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
MR-43	MFR	0.74	0.0012
R-18	LDR	0.25	0.0004
DESERT	DESERT	21.10	0.0330
Summation =		22.09	0.0346

Sub-Basin SUB-71 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
MR-43	MFR	5.35	0.0084
R-18	LDR	16.28	0.0254
CC	Comm	0.47	0.0007
Summation =		22.09	0.0345

Sub-Basin SUB-72 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	2.63	0.0041
R-18	LDR	22.02	0.0344
DESERT	DESERT	74.61	0.1166
Summation =		99.26	0.1551

Sub-Basin SUB-72 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	50.64	0.0791
DR-89	VLDR	12.25	0.0191
R-18	LDR	19.96	0.0312
CC	Comm	4.30	0.0067
R-190	VLDR	12.10	0.0189
Summation =		99.26	0.1550

Sub-Basin SUB-73 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
MR-43	MFR	0.81	0.0013
CC	Comm	0.53	0.0008
Desert	Desert	34.32	0.0536
Summation =		35.66	0.0557

Sub-Basin SUB-73 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DR-43	VLDR	0.54	0.0008
R-35	LDR	7.38	0.0115
R-18	LDR	15.92	0.0249
CC	Comm	1.32	0.0021
MR-43	MFR	9.78	0.0153
DR-190	VLDR	0.71	0.0011
Summation =		35.66	0.0557

Sub-Basin SUB-74 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
CC	COMM	2.64	0.0041
R-18	LDR	35.28	0.0551
R-35	LDR	2.37	0.0037

Sub-Basin SUB-74 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
CC	Comm	5.87	0.0092
R-18	LDR	34.47	0.0539
R-35	LDR	6.77	0.0106

DR-43	VLDR	3.54	0.0055
DESERT	DESERT	56.12	0.0877
Summation =		99.95	0.1561

DR-43	VLDR	23.07	0.0360
DR-89	VLDR	24.22	0.0378
R-190	VLDR	5.54	0.0087
Summation =		99.95	0.1562

Sub-Basin SUB-75 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
DESERT	DESERT	10.48	0.0164
Summation =		10.48	0.0164

Sub-Basin SUB-75 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-35	LDR	1.31	0.0020
R-18	LDR	3.61	0.0056
MR-43	MFR	2.67	0.0042
CC	Comm	2.88	0.0045
Summation =		10.48	0.0163

Sub-Basin SUB-76 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-18	LDR	10.20	0.0159
DESERT	DESERT	2.78	0.0043
Summation =		12.98	0.0202

Sub-Basin SUB-76 Zoning Numbering [3]	DDMS Land Use Classification	Area (AC)	Area (mi^2)
R-35	LDR	0.38	0.0006
R-18	LDR	10.20	0.0159
CC	Comm	2.40	0.0037
Summation =		12.98	0.0202

[3] Reference for Town of Cave Creek Zoning

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Computation

HDR

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100 YR, 24-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R14C-REACH	3270	2260	2219	41	0.0125	6.48	2	4
R19C-REACH	4116	2219	2172	47	0.0114	6.95	2	5
R18-REACH	2572	2172	2112	60	0.0233	14.61	2	1

100 YR, 6-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	VELOCITY (FPS)	NMIN	NSTPS
R14C-REACH	3270	2260	2219	41	0.0125	6.79	2	4
R19C-REACH	4116	2219	2172	47	0.0114	6.80	2	5
R18-REACH	2572	2172	2112	60	0.0233	13.99	2	2

CS DATA FOR R14C	
STA (RX)	ELEV (RY)
0.0	2246.0
4.8	2244.0
9.6	2242.0
14.5	2240.0
39.4	2240.0
78.3	2242.0
94.4	2244.0
110.1	2246.0

CS DATA FOR R19C	
STA (RX)	ELEV (RY)
0.0	2204.0
47.6	2202.0
66.1	2200.0
87.7	2198.0
106.8	2198.0
112.7	2200.0
131.1	2202.0
138.9	2204.0

CS DATA FOR R18	
STA (RX)	ELEV (RY)
0.0	2146.0
2.6	2144.0
5.9	2142.0
9.9	2140.0
20.8	2140.0
24.7	2142.0
27.3	2444.0
30.4	2146.0

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100 YR, 24-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R33F-BASIN	477.3	2196	2188	8	0.0168	3.34	2	1
R33D-REACH	1637.4	2188	2171	17	0.0104	3.83	2	4
R33C-REACH	1320.1	2171	2150	21	0.0159	6.97	2	2

100 YR, 6-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R33F-BASIN	477.3	2196	2188	8	0.0168	3.52	2	1
R33D-REACH	1637.4	2188	2171	17	0.0104	3.99	2	3
R33C-REACH	1320.1	2171	2150	21	0.0159	7.47	2	1

CS DATA FOR R33F	
STA (RX)	ELEV (RY)
0.0	2192.0
15	2191.0
30.0	2190.0
40.5	2188.0
41.5	2188.0
52.5	2190.0
73.7	2190.2
108.0	2192.0

CS DATA R33D	
STA (RX)	ELEV (RY)
0.0	2188.0
49.3	2186.0
60.6	2184.0
71.9	2182.0
83.0	2182.0
113.7	2184.0
175.9	2186.0
214.2	2188.0

CS DATA R33C	
STA (RX)	ELEV (RY)
0.0	2158.0
6.5	2156.0
14.3	2154.0
25.5	2152.0
44.2	2152.0
52.6	2154.0
58.3	2156.0
64.3	2158.0

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Computation

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100 YR, 24-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R46B-BASIN	563.9	2268	2246	22	0.0390	4.04	2	1
R45-REACH	4897.6	2246	2139	107	0.0218	4.19	2	10

100 YR, 6-HR

100-YR, 6-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R46B-BASIN	563.9	2268	2246	22	0.0390	4.29	2	1
R45-REACH	4897.6	2246	2139	107	0.0218	4.42	2	9

CS DATA FOR R46B	
STA (RX)	ELEV (RY)
0.0	2262.0
8.2	2260.0
16.6	2258.0
27.9	2256.0
50.0	2256.0
57.9	2258.0
65.9	2260.0
73.0	2262.0

CS DATA FOR R45	
STA (RX)	ELEV (RY)
0.0	2192.0
26.3	2190.0
64.2	2188.0
107.1	2186.0
146.4	2186.0
157.7	2188.0
166.9	2190.0
176.3	2192.0

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Project	Cave Creek Drainage Master Plan
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100 YR, 24-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWNSTREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R76-REACH	919.4	2120	2106	14	0.0152	3.01	2	3
R74-REACH	1412.1	2106	2076	30	0.0212	5.47	2	2
R70-BASIN	402.7	2098	2076	22	0.0546	5.30	2	1
R72-ROUTE	3491.8	2076	2000	76	0.0218	6.51	2	4
R69-ROUTE	2609.5	2000	1962	38	0.0146	6.50	2	3
R58-BASIN	454.7	1968	1962	6	0.0132	3.75	2	1
R60-ROUTE	419.7	1962	1956	6	0.0143	6.27	2	1
R61-ROUTE	780.1	1956	1948	8	0.0103	7.87	2	1
R63-ROUTE	2145.21	1948	1906	42	0.0196	11.43	2	2

100 YR, 6-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWNSTREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R76-REACH	919.4	2120	2106	14	0.0152	3.16	2	2
R74-REACH	1412.1	2106	2076	30	0.0212	5.71	2	2
R70-BASIN	402.7	2098	2076	22	0.0546	5.59	2	1
R72-ROUTE	3491.8	2076	2000	76	0.0218	6.84	2	4
R69-ROUTE	2609.5	2000	1962	38	0.0146	6.63	2	3
R58-BASIN	454.7	1968	1962	6	0.0132	3.98	2	1
R60-ROUTE	419.7	1962	1956	6	0.0143	6.39	2	1
R61-ROUTE	780.1	1956	1948	8	0.0103	7.87	2	1
R63-ROUTE	2145.21	1948	1906	42	0.0196	11.3	2	2

CS DATA FOR R76	
STA (RX)	ELEV (RY)
0.0	2114.0

CS DATA FOR R74	
STA (RX)	ELEV (RY)
0.0	2092.0

CS DATA FOR R70	
STA (RX)	ELEV (RY)
0.0	2092.0

44.9	2112.0
63.2	2110.0
67.9	2108.0
71.3	2108.0
107.2	2110.0
136.4	2112.0
159.2	2114.0

CS DATA FOR R72	
STA (RX)	ELEV (RY)
0.0	2005.0
21.3	2004.0
57.8	2002.0
75.7	2000.0
77.8	2000.0
85.0	2002.0
92.5	2004.0
99.9	2006.0

CS DATA FOR R61	
STA (RX)	ELEV (RY)
0.0	1950.0
7.4	1948.0
14.6	1946.0
36.2	1946.0
47.1	1946.0
62.9	1946.0
69.6	1948.0
76.4	1950.0

25.4	2090.0
69.1	2088.0
79.9	2086.0
84.8	2086.0
92.1	2088.0
99.9	2090.0
130.3	2092.0

CS DATA FOR R69 & R58	
STA (RX)	ELEV (RY)
0.0	1972.0
36.7	1970.0
77.1	1968.0
91.0	1966.0
126.4	1966.0
146.8	1968.0
157.7	1970.0
170.6	1972.0

CS DATA FOR R63	
STA (RX)	ELEV (RY)
0.0	1922.0
4.2	1920.0
8.2	1918.0
12.2	1916.0
36.3	1916.0
41.2	1918.0
45.8	1920.0
50.4	1922.0

10.7	2090.0
21.5	2088.0
44.3	2086.0
64.8	2086.0
88.0	2088.0
122.0	2090.0
149.0	2092.0

CS DATA FOR R60	
STA (RX)	ELEV (RY)
0.0	1964.0
42.8	1962.0
63.6	1960.0
82.6	1958.0
106.8	1958.0
117.5	1960.0
120.1	1960.0
182.8	1960.0

Job No.	40933

Computation

HDR

Project	Cave Creek Drainage Master Plan	Computed	MAF	Date	5/14/2007
Subject	Hydrology	Checked	LAP	Date	5/14/2007
Task	Cross Section Routing Data	Sheet	1	Of	1

100 YR, 24-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R65-BASIN	4576.1	1936	1876	60	0.0131	4.14	2	9

100 YR, 6-HR

ROUTE	LENGTH (FT)	UPSTREAM	DOWN STREAM	Δ HEIGHT (FT)	SLOPE (FT/FT)	Velocity (FPS)	NMIN	NSTPS
R65-BASIN	4576.1	1936	1876	60	0.0131	4.31	2	9

CS DATA FOR R33F	
STA (RX)	ELEV (RY)
0.0	1924.0
10.3	1922.0
19.3	1920.0
25.9	1918.0
32.9	1918.0
53.6	1920.0
89.4	1922.0
104.0	1924.0

Worksheet for Routing R14C-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01300	ft/ft
Discharge	1509.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2246.00
0+05	2244.00
0+10	2242.00
0+15	2240.00
0+39	2240.00
0+78	2242.00
0+94	2244.00
1+10	2246.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2246.00)	(0+15, 2240.00)	0.053
(0+15, 2240.00)	(0+39, 2240.00)	0.045
(0+39, 2240.00)	(1+10, 2246.00)	0.053

Results

Normal Depth	3.66	ft
Elevation Range	2240.00 to 2246.00 ft	
Flow Area	222.34	ft^2
Wetted Perimeter	86.96	ft
Top Width	86.08	ft
Normal Depth	3.66	ft
Critical Depth	3.14	ft
Critical Slope	0.02465	ft/ft

Worksheet for Routing R14C-100YR-6hr

Results

Velocity	6.79	ft/s
Velocity Head	0.72	ft
Specific Energy	4.38	ft
Froude Number	0.74	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.66	ft
Critical Depth	3.14	ft
Channel Slope	0.01300	ft/ft
Critical Slope	0.02465	ft/ft

Worksheet for Routing R19C-100YR-6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01100	ft/ft
Discharge	2344.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2204.00
0+48	2202.00
0+66	2200.00
0+88	2198.00
1+07	2198.00
1+13	2200.00
1+31	2202.00
1+39	2204.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2204.00)	(0+88, 2198.00)	0.053
(0+88, 2198.00)	(1+07, 2198.00)	0.045
(1+07, 2198.00)	(1+39, 2204.00)	0.053

Results

Normal Depth	5.44	ft
Elevation Range	2198.00 to 2204.00 ft	
Flow Area	344.60	ft²
Wetted Perimeter	124.20	ft
Top Width	123.35	ft
Normal Depth	5.44	ft
Critical Depth	4.69	ft
Critical Slope	0.02209	ft/ft

Worksheet for Routing R19C-100YR - 6 hr

Results

Velocity	6.80	ft/s
Velocity Head	0.72	ft
Specific Energy	6.16	ft
Froude Number	0.72	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	5.44	ft
Critical Depth	4.69	ft
Channel Slope	0.01100	ft/ft
Critical Slope	0.02209	ft/ft

Worksheet for Routing R33F-100YR - 6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01700	ft/ft
Discharge	60.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2192.00
0+15	2191.00
0+30	2190.00
0+41	2188.00
0+42	2188.00
0+53	2190.00
0+74	2190.20
1+08	2192.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2192.00)	(0+41, 2188.00)	0.053
(0+41, 2188.00)	(0+42, 2188.00)	0.045
(0+42, 2188.00)	(1+08, 2192.00)	0.053

Results

Normal Depth	1.69	ft
Elevation Range	2188.00 to 2192.00 ft	
Flow Area	17.06	ft^2
Wetted Perimeter	19.49	ft
Top Width	19.18	ft
Normal Depth	1.69	ft
Critical Depth	1.42	ft
Critical Slope	0.04160	ft/ft

Worksheet for Routing R33F-100YR - 6 hr

Results

Velocity		3.52	ft/s
Velocity Head		0.19	ft
Specific Energy		1.88	ft
Froude Number		0.66	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.69	ft
Critical Depth	1.42	ft
Channel Slope	0.01700	ft/ft
Critical Slope	0.04160	ft/ft

Worksheet for Routing R33D-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01040	ft/ft
Discharge	643.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2188.00
0+49	2186.00
0+61	2184.00
0+72	2182.00
0+83	2182.00
1+14	2184.00
1+76	2186.00
2+14	2188.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2188.00)	(0+72, 2182.00)	0.053
(0+72, 2182.00)	(0+83, 2182.00)	0.045
(0+83, 2182.00)	(2+14, 2188.00)	0.053

Results

Normal Depth	3.27	ft
Elevation Range	2182.00 to 2188.00 ft	
Flow Area	161.15	ft^2
Wetted Perimeter	100.10	ft
Top Width	99.73	ft
Normal Depth	3.27	ft
Critical Depth	2.53	ft
Critical Slope	0.03613	ft/ft

Worksheet for Routing R33D-100YR - 6 hr

Results

Velocity		3.99	ft/s
Velocity Head		0.25	ft
Specific Energy		3.52	ft
Froude Number		0.55	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.27	ft
Critical Depth	2.53	ft
Channel Slope	0.01040	ft/ft
Critical Slope	0.03613	ft/ft

Worksheet for Routing R33C-100YR - 6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01590	ft/ft
Discharge	1135.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2158.00
0+07	2156.00
0+15	2154.00
0+26	2152.00
0+44	2152.00
0+53	2154.00
0+58	2156.00
0+64	2158.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2158.00)	(0+26, 2152.00)	0.053
(0+26, 2152.00)	(0+44, 2152.00)	0.045
(0+44, 2152.00)	(0+64, 2158.00)	0.053

Results

Normal Depth	4.10	ft
Elevation Range	2152.00 to 2158.00 ft	
Flow Area	151.95	ft^2
Wetted Perimeter	53.44	ft
Top Width	52.40	ft
Normal Depth	4.10	ft
Critical Depth	3.57	ft
Critical Slope	0.02764	ft/ft

Worksheet for Routing R33C-100YR - 6hr

Results

Velocity	7.47	ft/s
Velocity Head	0.87	ft
Specific Energy	4.97	ft
Froude Number	0.77	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.10	ft
Critical Depth	3.57	ft
Channel Slope	0.01590	ft/ft
Critical Slope	0.02764	ft/ft

Worksheet for Routing R46B-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03900	ft/ft
Discharge	69.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2262.00
0+08	2260.00
0+17	2258.00
0+28	2256.00
0+50	2256.00
0+58	2258.00
0+66	2260.00
0+73	2262.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2262.00)	(0+28, 2256.00)	0.053
(0+28, 2256.00)	(0+50, 2256.00)	0.045
(0+50, 2256.00)	(0+73, 2262.00)	0.053

Results

Normal Depth	0.64	ft
Elevation Range	2256.00 to 2262.00 ft	
Flow Area	16.10	ft²
Wetted Perimeter	28.38	ft
Top Width	28.24	ft
Normal Depth	0.64	ft
Critical Depth	0.64	ft
Critical Slope	0.03887	ft/ft

Worksheet for Routing R46B-100YR -6hr

Results

Velocity	4.29	ft/s
Velocity Head	0.29	ft
Specific Energy	0.93	ft
Froude Number	1.00	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.64	ft
Critical Depth	0.64	ft
Channel Slope	0.03900	ft/ft
Critical Slope	0.03887	ft/ft

Worksheet for Routing R45-100YR - 6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Discharge	320.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2192.00
0+26	2190.00
0+64	2188.00
1+07	2186.00
1+46	2186.00
1+58	2188.00
1+67	2190.00
1+76	2192.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2192.00)	(1+07, 2186.00)	0.053
(1+07, 2186.00)	(1+46, 2186.00)	0.045
(1+46, 2186.00)	(1+76, 2192.00)	0.053

Results

Normal Depth	1.28	ft
Elevation Range	2186.00 to 2192.00 ft	
Flow Area	72.44	ft²
Wetted Perimeter	74.11	ft
Top Width	73.97	ft
Normal Depth	1.28	ft
Critical Depth	1.11	ft
Critical Slope	0.03661	ft/ft

Worksheet for Routing R45-100YR -6hr

Results

Velocity		4.42	ft/s
Velocity Head		0.30	ft
Specific Energy		1.58	ft
Froude Number		0.79	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.28	ft
Critical Depth	1.11	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.03661	ft/ft

Worksheet for Routing R76-100YR - 6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01520	ft/ft
Discharge	97.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2114.00
0+45	2112.00
0+63	2110.00
0+68	2108.00
0+71	2108.00
1+07	2110.00
1+36	2112.00
1+59	2114.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2114.00)	(0+68, 2108.00)	0.053
(0+68, 2108.00)	(0+71, 2108.00)	0.045
(0+71, 2108.00)	(1+59, 2114.00)	0.053

Results

Normal Depth	1.58	ft
Elevation Range	2108.00 to 2114.00 ft	
Flow Area	30.70	ft²
Wetted Perimeter	35.84	ft
Top Width	35.47	ft
Normal Depth	1.58	ft
Critical Depth	1.26	ft
Critical Slope	0.04540	ft/ft

Worksheet for Routing R76-100YR -6hr

Results

Velocity	3.16	ft/s
Velocity Head	0.16	ft
Specific Energy	1.73	ft
Froude Number	0.60	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.58	ft
Critical Depth	1.26	ft
Channel Slope	0.01520	ft/ft
Critical Slope	0.04540	ft/ft

Worksheet for Routing R74-100YR - 6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02120	ft/ft
Discharge	681.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2092.00
0+25	2090.00
0+69	2088.00
0+80	2086.00
0+85	2086.00
0+92	2088.00
1+00	2090.00
1+30	2092.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2092.00)	(0+80, 2086.00)	0.053
(0+80, 2086.00)	(0+85, 2086.00)	0.045
(0+85, 2086.00)	(1+30, 2092.00)	0.053

Results

Normal Depth	3.92	ft
Elevation Range	2086.00 to 2092.00 ft	
Flow Area	119.25	ft²
Wetted Perimeter	73.08	ft
Top Width	72.34	ft
Normal Depth	3.92	ft
Critical Depth	3.60	ft
Critical Slope	0.03544	ft/ft

Worksheet for Routing R74-100YR - 6 hr

Results

Velocity		5.71	ft/s
Velocity Head		0.51	ft
Specific Energy		4.42	ft
Froude Number		0.78	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.92	ft
Critical Depth	3.60	ft
Channel Slope	0.02120	ft/ft
Critical Slope	0.03544	ft/ft

Worksheet for Routing R70-100YR - 6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05460	ft/ft
Discharge	168.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2092.00
0+11	2090.00
0+22	2088.00
0+44	2086.00
0+65	2086.00
0+88	2088.00
1+22	2090.00
1+49	2092.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2092.00)	(0+44, 2086.00)	0.053
(0+44, 2086.00)	(0+65, 2086.00)	0.045
(0+65, 2086.00)	(1+49, 2092.00)	0.053

Results

Normal Depth	0.96	ft
Elevation Range	2086.00 to 2092.00 ft	
Flow Area	30.07	ft²
Wetted Perimeter	42.55	ft
Top Width	42.47	ft
Normal Depth	0.96	ft
Critical Depth	1.04	ft
Critical Slope	0.03889	ft/ft

Worksheet for Routing R70-100YR - 6hr

Results

Velocity	5.59	ft/s
Velocity Head	0.49	ft
Specific Energy	1.44	ft
Froude Number	1.17	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.96	ft
Critical Depth	1.04	ft
Channel Slope	0.05460	ft/ft
Critical Slope	0.03889	ft/ft

Worksheet for Routing R72-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Discharge	1347.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2005.00
0+21	2004.00
0+58	2002.00
0+76	2000.00
0+78	2000.00
0+85	2002.00
0+93	2004.00
1+00	2006.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2005.00)	(0+76, 2000.00)	0.053
(0+76, 2000.00)	(0+78, 2000.00)	0.045
(0+78, 2000.00)	(1+00, 2006.00)	0.053

Results

Normal Depth	4.85	ft
Elevation Range	2000.00 to 2006.00 ft	
Flow Area	196.98	ft²
Wetted Perimeter	93.21	ft
Top Width	92.38	ft
Normal Depth	4.85	ft
Critical Depth	4.52	ft
Critical Slope	0.03270	ft/ft

Worksheet for Routing R72-100YR -6hr

Results

Velocity	6.84	ft/s
Velocity Head	0.73	ft
Specific Energy	5.57	ft
Froude Number	0.83	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.85	ft
Critical Depth	4.52	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.03270	ft/ft

Worksheet for Routing R69-100YR -Chr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01460	ft/ft
Discharge	2193.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1972.00
0+37	1970.00
0+77	1968.00
0+91	1966.00
1+26	1966.00
1+47	1968.00
1+58	1970.00
1+71	1972.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1972.00)	(0+91, 1966.00)	0.053
(0+91, 1966.00)	(1+26, 1966.00)	0.045
(1+26, 1966.00)	(1+71, 1972.00)	0.053

Results

Normal Depth	4.28	ft
Elevation Range	1966.00 to 1972.00 ft	
Flow Area	331.01	ft²
Wetted Perimeter	128.52	ft
Top Width	128.01	ft
Normal Depth	4.28	ft
Critical Depth	3.66	ft
Critical Slope	0.02885	ft/ft

Worksheet for Routing R69-100YR -6hr

Results

Velocity	6.63	ft/s
Velocity Head	0.68	ft
Specific Energy	4.96	ft
Froude Number	0.73	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.28	ft
Critical Depth	3.66	ft
Channel Slope	0.01460	ft/ft
Critical Slope	0.02885	ft/ft

Worksheet for Routing R58-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01320	ft/ft
Discharge	296.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1972.00
0+37	1970.00
0+77	1968.00
0+91	1966.00
1+26	1966.00
1+47	1968.00
1+58	1970.00
1+71	1972.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1972.00)	(0+91, 1966.00)	0.053
(0+91, 1966.00)	(1+26, 1966.00)	0.045
(1+26, 1966.00)	(1+71, 1972.00)	0.053

Results

Normal Depth	1.53	ft
Elevation Range	1966.00 to 1972.00 ft	
Flow Area	74.46	ft²
Wetted Perimeter	61.89	ft
Top Width	61.70	ft
Normal Depth	1.53	ft
Critical Depth	1.17	ft
Critical Slope	0.03499	ft/ft

Worksheet for Routing R58-100YR -6 hr

Results

Velocity	3.98	ft/s
Velocity Head	0.25	ft
Specific Energy	1.78	ft
Froude Number	0.64	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.53	ft
Critical Depth	1.17	ft
Channel Slope	0.01320	ft/ft
Critical Slope	0.03499	ft/ft

Worksheet for Routing R60-100YR -6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01430	ft/ft
Discharge	2420.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1964.00
0+43	1962.00
0+64	1960.00
0+83	1958.00
1+07	1958.00
1+18	1960.00
1+20	1960.00
1+83	1960.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1964.00)	(0+83, 1958.00)	0.053
(0+83, 1958.00)	(1+07, 1958.00)	0.045
(1+07, 1958.00)	(1+83, 1960.00)	0.053

Results

Normal Depth	4.29	ft
Elevation Range	1958.00 to 1964.00 ft	
Flow Area	378.51	ft²
Wetted Perimeter	148.84	ft
Top Width	146.16	ft
Normal Depth	4.29	ft
Critical Depth	3.67	ft
Critical Slope	0.03094	ft/ft

Worksheet for Routing R60-100YR - 6hr

Results

Velocity	6.39	ft/s
Velocity Head	0.64	ft
Specific Energy	4.92	ft
Froude Number	0.70	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.29	ft
Critical Depth	3.67	ft
Channel Slope	0.01430	ft/ft
Critical Slope	0.03094	ft/ft

Worksheet for Routing R61-100YR - 6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01030	ft/ft
Discharge	2494.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1950.00
0+07	1948.00
0+15	1946.00
0+36	1946.00
0+47	1946.00
0+63	1946.00
0+70	1948.00
0+76	1950.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1950.00)	(0+15, 1946.00)	0.053
(0+15, 1946.00)	(0+63, 1946.00)	0.045
(0+63, 1946.00)	(0+76, 1950.00)	0.053

Results

Normal Depth	4.89	ft
Elevation Range	1946.00 to 1950.00 ft	
Flow Area	317.01	ft²
Wetted Perimeter	79.30	ft
Top Width	76.40	ft
Normal Depth	4.89	ft
Critical Depth	3.95	ft
Critical Slope	0.02345	ft/ft

Worksheet for Routing R61-100YR - 6hr

Results

Velocity	7.87	ft/s
Velocity Head	0.96	ft
Specific Energy	5.85	ft
Froude Number	0.68	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.89	ft
Critical Depth	3.95	ft
Channel Slope	0.01030	ft/ft
Critical Slope	0.02345	ft/ft

Worksheet for Routing R63-100YR -6hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01960	ft/ft
Discharge	2671.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1922.00
0+04	1920.00
0+08	1918.00
0+12	1916.00
0+36	1916.00
0+41	1918.00
0+46	1920.00
0+50	1922.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1922.00)	(0+12, 1916.00)	0.053
(0+12, 1916.00)	(0+36, 1916.00)	0.045
(0+36, 1916.00)	(0+50, 1922.00)	0.053

Results

Normal Depth	6.25	ft
Elevation Range	1916.00 to 1922.00 ft	
Flow Area	236.39	ft²
Wetted Perimeter	53.52	ft
Top Width	50.40	ft
Normal Depth	6.25	ft
Critical Depth	6.00	ft
Critical Slope	0.02330	ft/ft

Worksheet for Routing R63-100YR - 6hr

Results

Velocity		11.30	ft/s
Velocity Head		1.98	ft
Specific Energy		8.24	ft
Froude Number		0.92	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	6.25	ft
Critical Depth	6.00	ft
Channel Slope	0.01960	ft/ft
Critical Slope	0.02330	ft/ft

Worksheet for Routing R18-100YR - 6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02330	ft/ft
Discharge	3129.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2146.00
0+03	2144.00
0+06	2142.00
0+10	2140.00
0+21	2140.00
0+25	2142.00
0+27	2144.00
0+30	2146.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2146.00)	(0+10, 2140.00)	0.053
(0+10, 2140.00)	(0+21, 2140.00)	0.045
(0+21, 2140.00)	(0+30, 2146.00)	0.053

Results

Normal Depth	9.14	ft
Elevation Range	2140.00 to 2146.00 ft	
Flow Area	223.64	ft²
Wetted Perimeter	40.14	ft
Top Width	30.40	ft
Normal Depth	9.14	ft
Critical Depth	8.68	ft
Critical Slope	0.02791	ft/ft

Worksheet for Routing R18-100YR - 6hr

Results

Velocity	13.99	ft/s
Velocity Head	3.04	ft
Specific Energy	12.18	ft
Froude Number	0.91	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	9.14	ft
Critical Depth	8.68	ft
Channel Slope	0.02330	ft/ft
Critical Slope	0.02791	ft/ft

Worksheet for Routing R65-100YR - 6 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01310	ft/ft
Discharge	372.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1924.00
0+10	1922.00
0+19	1920.00
0+26	1918.00
0+33	1918.00
0+54	1920.00
0+89	1922.00
1+04	1924.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1924.00)	(0+26, 1918.00)	0.053
(0+26, 1918.00)	(0+33, 1918.00)	0.045
(0+33, 1918.00)	(1+04, 1924.00)	0.053

Results

Normal Depth	2.99	ft
Elevation Range	1918.00 to 1924.00 ft	
Flow Area	86.38	ft^2
Wetted Perimeter	57.05	ft
Top Width	56.52	ft
Normal Depth	2.99	ft
Critical Depth	2.41	ft
Critical Slope	0.03657	ft/ft

Worksheet for Routing R65-100YR -6hr

Results

Velocity	4.31	ft/s
Velocity Head	0.29	ft
Specific Energy	3.28	ft
Froude Number	0.61	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.99	ft
Critical Depth	2.41	ft
Channel Slope	0.01310	ft/ft
Critical Slope	0.03657	ft/ft

Worksheet for Routing R14C-100YR -24 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01250	ft/ft
Discharge	1355.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2246.00
0+05	2244.00
0+10	2242.00
0+15	2240.00
0+39	2240.00
0+78	2242.00
0+94	2244.00
1+10	2246.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2246.00)	(0+15, 2240.00)	0.053
(0+15, 2240.00)	(0+39, 2240.00)	0.045
(0+39, 2240.00)	(1+10, 2246.00)	0.053

Results

Normal Depth	3.51	ft
Elevation Range	2240.00 to 2246.00 ft	
Flow Area	209.02	ft²
Wetted Perimeter	85.29	ft
Top Width	84.45	ft
Normal Depth	3.51	ft
Critical Depth	2.97	ft
Critical Slope	0.02501	ft/ft

Worksheet for Routing R14C-100YR -24hr

Results

Velocity		6.48	ft/s
Velocity Head		0.65	ft
Specific Energy		4.16	ft
Froude Number		0.73	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.51	ft
Critical Depth	2.97	ft
Channel Slope	0.01250	ft/ft
Critical Slope	0.02501	ft/ft

Worksheet for Routing R19C-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01140	ft/ft
Discharge	2437.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2204.00
0+48	2202.00
0+66	2200.00
0+88	2198.00
1+07	2198.00
1+13	2200.00
1+31	2202.00
1+39	2204.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2204.00)	(0+88, 2198.00)	0.053
(0+88, 2198.00)	(1+07, 2198.00)	0.045
(1+07, 2198.00)	(1+39, 2204.00)	0.053

Results

Normal Depth	5.49	ft
Elevation Range	2198.00 to 2204.00 ft	
Flow Area	350.61	ft²
Wetted Perimeter	125.55	ft
Top Width	124.69	ft
Normal Depth	5.49	ft
Critical Depth	4.77	ft
Critical Slope	0.02204	ft/ft

Worksheet for Routing R19C-100YR - 24hr

Results

Velocity	6.95	ft/s
Velocity Head	0.75	ft
Specific Energy	6.24	ft
Froude Number	0.73	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	5.49	ft
Critical Depth	4.77	ft
Channel Slope	0.01140	ft/ft
Critical Slope	0.02204	ft/ft

Worksheet for Routing R33F-100YR-24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01680	ft/ft
Discharge	49.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2192.00
0+15	2191.00
0+30	2190.00
0+41	2188.00
0+42	2188.00
0+53	2190.00
0+74	2190.20
1+08	2192.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2192.00)	(0+41, 2188.00)	0.053
(0+41, 2188.00)	(0+42, 2188.00)	0.045
(0+42, 2188.00)	(1+08, 2192.00)	0.053

Results

Normal Depth	1.56	ft
Elevation Range	2188.00 to 2192.00 ft	
Flow Area	14.69	ft²
Wetted Perimeter	18.09	ft
Top Width	17.80	ft
Normal Depth	1.56	ft
Critical Depth	1.30	ft
Critical Slope	0.04245	ft/ft

Worksheet for Routing R33F-100YR -24hr

Results

Velocity		3.34	ft/s
Velocity Head		0.17	ft
Specific Energy		1.74	ft
Froude Number		0.65	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.56	ft
Critical Depth	1.30	ft
Channel Slope	0.01680	ft/ft
Critical Slope	0.04245	ft/ft

Worksheet for Routing R33D-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01040	ft/ft
Discharge	526.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2188.00
0+49	2186.00
0+61	2184.00
0+72	2182.00
0+83	2182.00
1+14	2184.00
1+76	2186.00
2+14	2188.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2188.00)	(0+72, 2182.00)	0.053
(0+72, 2182.00)	(0+83, 2182.00)	0.045
(0+83, 2182.00)	(2+14, 2188.00)	0.053

Results

Normal Depth	3.02	ft
Elevation Range	2182.00 to 2188.00 ft	
Flow Area	137.30	ft²
Wetted Perimeter	90.86	ft
Top Width	90.51	ft
Normal Depth	3.02	ft
Critical Depth	2.30	ft
Critical Slope	0.03665	ft/ft

Worksheet for Routing R33D-100YR -24hr

Results

Velocity	3.83	ft/s
Velocity Head	0.23	ft
Specific Energy	3.25	ft
Froude Number	0.55	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.02	ft
Critical Depth	2.30	ft
Channel Slope	0.01040	ft/ft
Critical Slope	0.03665	ft/ft

Worksheet for Routing R33C-100YR - 24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01590	ft/ft
Discharge	888.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2158.00
0+07	2156.00
0+15	2154.00
0+26	2152.00
0+44	2152.00
0+53	2154.00
0+58	2156.00
0+64	2158.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2158.00)	(0+26, 2152.00)	0.053
(0+26, 2152.00)	(0+44, 2152.00)	0.045
(0+44, 2152.00)	(0+64, 2158.00)	0.053

Results

Normal Depth	3.62	ft
Elevation Range	2152.00 to 2158.00 ft	
Flow Area	127.48	ft²
Wetted Perimeter	50.06	ft
Top Width	49.17	ft
Normal Depth	3.62	ft
Critical Depth	3.12	ft
Critical Slope	0.02850	ft/ft

Worksheet for Routing R33C-100YR - 24 hr

Results

Velocity	6.97	ft/s
Velocity Head	0.75	ft
Specific Energy	4.38	ft
Froude Number	0.76	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.62	ft
Critical Depth	3.12	ft
Channel Slope	0.01590	ft/ft
Critical Slope	0.02850	ft/ft

Worksheet for Routing R46B-100YR - 24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.03900	ft/ft
Discharge	58.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2262.00
0+08	2260.00
0+17	2258.00
0+28	2256.00
0+50	2256.00
0+58	2258.00
0+66	2260.00
0+73	2262.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2262.00)	(0+28, 2256.00)	0.053
(0+28, 2256.00)	(0+50, 2256.00)	0.045
(0+50, 2256.00)	(0+73, 2262.00)	0.053

Results

Normal Depth	0.58	ft
Elevation Range	2256.00 to 2262.00 ft	
Flow Area	14.35	ft²
Wetted Perimeter	27.76	ft
Top Width	27.64	ft
Normal Depth	0.58	ft
Critical Depth	0.57	ft
Critical Slope	0.03993	ft/ft

Worksheet for Routing R46B-100YR - 24hr

Results

Velocity		4.04	ft/s
Velocity Head		0.25	ft
Specific Energy		0.83	ft
Froude Number		0.99	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.58	ft
Critical Depth	0.57	ft
Channel Slope	0.03900	ft/ft
Critical Slope	0.03993	ft/ft

Worksheet for Routing R45-100YR - 24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Discharge	266.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2192.00
0+26	2190.00
0+64	2188.00
1+07	2186.00
1+46	2186.00
1+58	2188.00
1+67	2190.00
1+76	2192.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2192.00)	(1+07, 2186.00)	0.053
(1+07, 2186.00)	(1+46, 2186.00)	0.045
(1+46, 2186.00)	(1+76, 2192.00)	0.053

Results

Normal Depth	1.16	ft
Elevation Range	2186.00 to 2192.00 ft	
Flow Area	63.47	ft²
Wetted Perimeter	70.73	ft
Top Width	70.60	ft
Normal Depth	1.16	ft
Critical Depth	1.00	ft
Critical Slope	0.03744	ft/ft

Worksheet for Routing R45-100YR -24hr

Results

Velocity	4.19	ft/s
Velocity Head	0.27	ft
Specific Energy	1.43	ft
Froude Number	0.78	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.16	ft
Critical Depth	1.00	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.03744	ft/ft

Worksheet for Routing R76-100YR - 24 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01520	ft/ft
Discharge	80.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2114.00
0+45	2112.00
0+63	2110.00
0+68	2108.00
0+71	2108.00
1+07	2110.00
1+36	2112.00
1+59	2114.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2114.00)	(0+68, 2108.00)	0.053
(0+68, 2108.00)	(0+71, 2108.00)	0.045
(0+71, 2108.00)	(1+59, 2114.00)	0.053

Results

Normal Depth	1.46	ft
Elevation Range	2108.00 to 2114.00 ft	
Flow Area	26.55	ft²
Wetted Perimeter	33.35	ft
Top Width	33.01	ft
Normal Depth	1.46	ft
Critical Depth	1.16	ft
Critical Slope	0.04650	ft/ft

Worksheet for Routing R76-100YR -24hr

Results

Velocity	3.01	ft/s
Velocity Head	0.14	ft
Specific Energy	1.60	ft
Froude Number	0.59	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.46	ft
Critical Depth	1.16	ft
Channel Slope	0.01520	ft/ft
Critical Slope	0.04650	ft/ft

Worksheet for Routing R74-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02120	ft/ft
Discharge	554.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2092.00
0+25	2090.00
0+69	2088.00
0+80	2086.00
0+85	2086.00
0+92	2088.00
1+00	2090.00
1+30	2092.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2092.00)	(0+80, 2086.00)	0.053
(0+80, 2086.00)	(0+85, 2086.00)	0.045
(0+85, 2086.00)	(1+30, 2092.00)	0.053

Results

Normal Depth	3.66	ft
Elevation Range	2086.00 to 2092.00 ft	
Flow Area	101.29	ft²
Wetted Perimeter	66.34	ft
Top Width	65.64	ft
Normal Depth	3.66	ft
Critical Depth	3.34	ft
Critical Slope	0.03618	ft/ft

Worksheet for Routing R74-100YR -24hr

Results

Velocity	5.47	ft/s
Velocity Head	0.46	ft
Specific Energy	4.12	ft
Froude Number	0.78	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.66	ft
Critical Depth	3.34	ft
Channel Slope	0.02120	ft/ft
Critical Slope	0.03618	ft/ft

Worksheet for Routing R70-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05460	ft/ft
Discharge	139.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2092.00
0+11	2090.00
0+22	2088.00
0+44	2086.00
0+65	2086.00
0+88	2088.00
1+22	2090.00
1+49	2092.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2092.00)	(0+44, 2086.00)	0.053
(0+44, 2086.00)	(0+65, 2086.00)	0.045
(0+65, 2086.00)	(1+49, 2092.00)	0.053

Results

Normal Depth	0.86	ft
Elevation Range	2086.00 to 2092.00 ft	
Flow Area	26.22	ft²
Wetted Perimeter	40.40	ft
Top Width	40.33	ft
Normal Depth	0.86	ft
Critical Depth	0.94	ft
Critical Slope	0.03972	ft/ft

Worksheet for Routing R70-100YR -24hr

Results

Velocity		5.30	ft/s
Velocity Head		0.44	ft
Specific Energy		1.30	ft
Froude Number		1.16	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.86	ft
Critical Depth	0.94	ft
Channel Slope	0.05460	ft/ft
Critical Slope	0.03972	ft/ft

Worksheet for Routing R72-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02180	ft/ft
Discharge	1071.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2005.00
0+21	2004.00
0+58	2002.00
0+76	2000.00
0+78	2000.00
0+85	2002.00
0+93	2004.00
1+00	2006.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2005.00)	(0+76, 2000.00)	0.053
(0+76, 2000.00)	(0+78, 2000.00)	0.045
(0+78, 2000.00)	(1+00, 2006.00)	0.053

Results

Normal Depth	4.48	ft
Elevation Range	2000.00 to 2006.00 ft	
Flow Area	164.56	ft²
Wetted Perimeter	83.92	ft
Top Width	83.14	ft
Normal Depth	4.48	ft
Critical Depth	4.15	ft
Critical Slope	0.03353	ft/ft

Worksheet for Routing R72-100YR-24hr

Results

Velocity	6.51	ft/s
Velocity Head	0.66	ft
Specific Energy	5.14	ft
Froude Number	0.82	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.48	ft
Critical Depth	4.15	ft
Channel Slope	0.02180	ft/ft
Critical Slope	0.03353	ft/ft

Worksheet for Routing R69-100YR - 24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01460	ft/ft
Discharge	2022.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1972.00
0+37	1970.00
0+77	1968.00
0+91	1966.00
1+26	1966.00
1+47	1968.00
1+58	1970.00
1+71	1972.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1972.00)	(0+91, 1966.00)	0.053
(0+91, 1966.00)	(1+26, 1966.00)	0.045
(1+26, 1966.00)	(1+71, 1972.00)	0.053

Results

Normal Depth	4.13	ft
Elevation Range	1966.00 to 1972.00 ft	
Flow Area	311.17	ft²
Wetted Perimeter	124.60	ft
Top Width	124.11	ft
Normal Depth	4.13	ft
Critical Depth	3.51	ft
Critical Slope	0.02908	ft/ft

Worksheet for Routing R69-100YR -24hr

Results

Velocity		6.50	ft/s
Velocity Head		0.66	ft
Specific Energy		4.78	ft
Froude Number		0.72	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.13	ft
Critical Depth	3.51	ft
Channel Slope	0.01460	ft/ft
Critical Slope	0.02908	ft/ft

Worksheet for Routing R58-100YR -24 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01320	ft/ft
Discharge	243.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1972.00
0+37	1970.00
0+77	1968.00
0+91	1966.00
1+26	1966.00
1+47	1968.00
1+58	1970.00
1+71	1972.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1972.00)	(0+91, 1966.00)	0.053
(0+91, 1966.00)	(1+26, 1966.00)	0.045
(1+26, 1966.00)	(1+71, 1972.00)	0.053

Results

Normal Depth	1.37	ft
Elevation Range	1966.00 to 1972.00 ft	
Flow Area	64.78	ft²
Wetted Perimeter	59.12	ft
Top Width	58.95	ft
Normal Depth	1.37	ft
Critical Depth	1.04	ft
Critical Slope	0.03589	ft/ft

Worksheet for Routing R58-100YR -24hr

Results

Velocity	3.75	ft/s
Velocity Head	0.22	ft
Specific Energy	1.59	ft
Froude Number	0.63	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.37	ft
Critical Depth	1.04	ft
Channel Slope	0.01320	ft/ft
Critical Slope	0.03589	ft/ft

Worksheet for Routing R60-100YR-24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01430	ft/ft
Discharge	2338.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1964.00
0+43	1962.00
0+64	1960.00
0+83	1958.00
1+07	1958.00
1+18	1960.00
1+20	1960.00
1+83	1960.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1964.00)	(1+07, 1958.00)	0.053
(1+07, 1958.00)	(1+18, 1960.00)	0.045
(1+18, 1960.00)	(1+83, 1960.00)	0.053

Results

Normal Depth	4.25	ft
Elevation Range	1958.00 to 1964.00 ft	
Flow Area	372.73	ft^2
Wetted Perimeter	147.96	ft
Top Width	145.32	ft
Normal Depth	4.25	ft
Critical Depth	3.62	ft
Critical Slope	0.03195	ft/ft

Worksheet for Routing R60-100YR -24hr

Results

Velocity	6.27	ft/s
Velocity Head	0.61	ft
Specific Energy	4.86	ft
Froude Number	0.69	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.25	ft
Critical Depth	3.62	ft
Channel Slope	0.01430	ft/ft
Critical Slope	0.03195	ft/ft

Worksheet for Routing R61-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01030	ft/ft
Discharge	2494.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1950.00
0+07	1948.00
0+15	1946.00
0+36	1946.00
0+47	1946.00
0+63	1946.00
0+70	1948.00
0+76	1950.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1950.00)	(0+15, 1946.00)	0.053
(0+15, 1946.00)	(0+63, 1946.00)	0.045
(0+63, 1946.00)	(0+76, 1950.00)	0.053

Results

Normal Depth	4.89	ft
Elevation Range	1946.00 to 1950.00 ft	
Flow Area	317.01	ft²
Wetted Perimeter	79.30	ft
Top Width	76.40	ft
Normal Depth	4.89	ft
Critical Depth	3.95	ft
Critical Slope	0.02345	ft/ft

Worksheet for Routing R61-100YR -24hr

Results

Velocity	7.87	ft/s
Velocity Head	0.96	ft
Specific Energy	5.85	ft
Froude Number	0.68	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.89	ft
Critical Depth	3.95	ft
Channel Slope	0.01030	ft/ft
Critical Slope	0.02345	ft/ft

Worksheet for Routing R63-100YR - 24 hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01960	ft/ft
Discharge	2760.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	1922.00
0+04	1920.00
0+08	1918.00
0+12	1916.00
0+36	1916.00
0+41	1918.00
0+46	1920.00
0+50	1922.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 1922.00)	(0+12, 1916.00)	0.053
(0+12, 1916.00)	(0+36, 1916.00)	0.045
(0+36, 1916.00)	(0+50, 1922.00)	0.053

Results

Normal Depth	6.35	ft
Elevation Range	1916.00 to 1922.00 ft	
Flow Area	241.47	ft²
Wetted Perimeter	53.73	ft
Top Width	50.40	ft
Normal Depth	6.35	ft
Critical Depth	6.10	ft
Critical Slope	0.02326	ft/ft

Worksheet for Routing R63-100YR -24hr

Results

Velocity		11.43	ft/s
Velocity Head		2.03	ft
Specific Energy		8.38	ft
Froude Number		0.92	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	6.35	ft
Critical Depth	6.10	ft
Channel Slope	0.01960	ft/ft
Critical Slope	0.02326	ft/ft

Worksheet for Routing R18-100YR -24hr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02330	ft/ft
Discharge	3640.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	2146.00
0+03	2144.00
0+06	2142.00
0+10	2140.00
0+21	2140.00
0+25	2142.00
0+27	2144.00
0+30	2146.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 2146.00)	(0+10, 2140.00)	0.053
(0+10, 2140.00)	(0+21, 2140.00)	0.045
(0+21, 2140.00)	(0+30, 2146.00)	0.053

Results

Normal Depth	9.98	ft
Elevation Range	2140.00 to 2146.00 ft	
Flow Area	249.18	ft²
Wetted Perimeter	41.82	ft
Top Width	30.40	ft
Normal Depth	9.98	ft
Critical Depth	9.42	ft
Critical Slope	0.02844	ft/ft

Worksheet for Routing R18-100YR - 24hr

Results

Velocity	14.61	ft/s
Velocity Head	3.32	ft
Specific Energy	13.29	ft
Froude Number	0.90	
Flow Type	Subcritical	

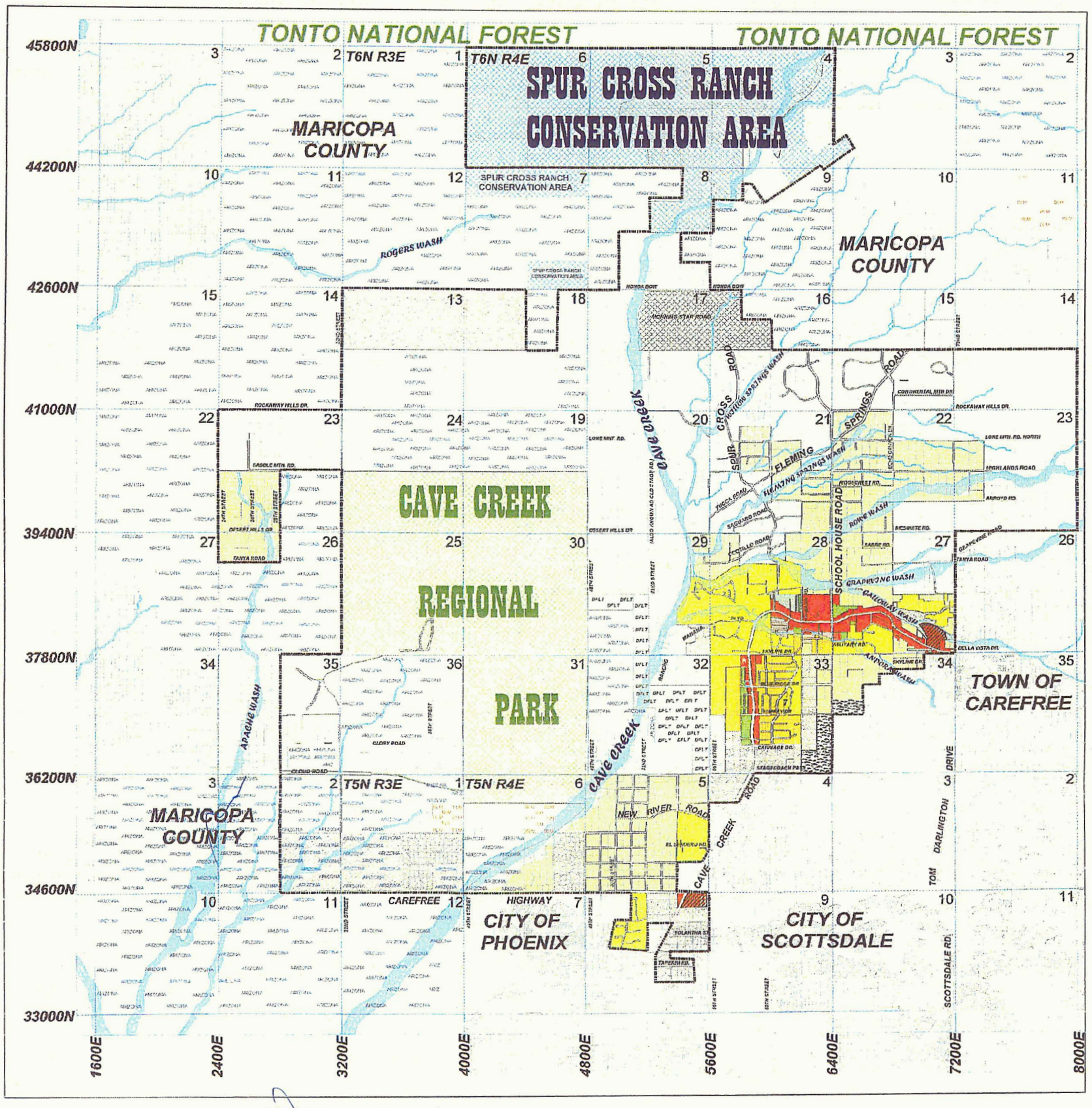
GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	9.98	ft
Critical Depth	9.42	ft
Channel Slope	0.02330	ft/ft
Critical Slope	0.02844	ft/ft

TOWN OF CAVE CREEK ZONING MAP



ZONING DISTRICTS

	DR-190	Desert Rural Residential
	DR-89	Desert Rural Residential
	DR-70	Desert Rural Residential
	DR-43	Desert Rural Residential
	R-35	Single-Family Residential
	R-18	Single-Family Residential
	MR-8	Multi-Family Residential
	MR-14	Multi-Family Residential
	MR-21	Multi-Family Residential
	MR-43	Multi-Family Residential
	CB	Commercial Buffer
	CC	Commercial Core
	GC	General Commercial
	OSR	Open Space Recreation
	OSC	Open Space Conservation

OVERLAY DISTRICTS

	PD Planned Development Overlay

OTHER FEATURES

---------	Jurisdictional Boundary
	Black Mountain Preserve
	Gateway Park
	Cave Creek Regional Park
	Spur Cross Ranch Conservation Area
ARIZONA	STATE OF ARIZONA TRUST LANDS
DFLT	DESERT FOOTHILLS LAND TRUST
BLM	BUREAU OF LAND MANAGEMENT

NOT TO SCALE

JANUARY 31, 2006
DWG. BY: L. SAHR

NOTE:
This Zoning Map is for reference purposes only and is subject to change. Please contact the Town of Cave Creek Planning & Zoning Department for individual parcel zoning confirmation @ (480)-595-1930.

FOR THE TOWN OF CAVE CREEK:

Vincent Francia, Mayor Date

ATTEST TO:

Carrie Dyrek, Town Clerk Date

TOWN OF CAVE CREEK ZONING DISTRICT BULK REGULATIONS CHART - APRIL 26, 2006

ZONING DISTRICT	ZONE CODE	LAND USE DESIGNATION	DWELLING UNITS PER ACRE	MAXIMUM BUILDING HEIGHT (Measured From Original Natural Grade)		MINIMUM YARD SETBACKS (FEET)				INTENSITY OF USE				
				STORIES	FEET	FRONT	REAR	INTERIOR SIDE	STREET SIDE	MIN. LOT AREA (Sq. Ft.)	MIN. LOT WIDTH (Feet)	MIN. LOT AREA Per D.U. (Sq. Ft.)	MAX. LOT COVERAGE (% of Lot)	MAX. LOT DISTURBANCE (% of Lot)
DESERT RURAL	DR-190	LOW DENSITY RESIDENTIAL	.23	2	25	60	60	30	30	190,000	300	190,000	5%	75%
DESERT RURAL	DR-89	LOW DENSITY RESIDENTIAL	.49	2	25	60	60	30	30	89,000	250	89,000	10%	75%
DESERT RURAL	DR-70	LOW DENSITY RESIDENTIAL	.62	2	25	60	60	30	30	70,000	250	70,000	10%	75%
DESERT RURAL	DR-43	LOW DENSITY RESIDENTIAL	1.01	2	25	40	40	20	30	43,000	145	43,000	15%	75%
SINGLE-FAMILY RESIDENTIAL	R-35	MEDIUM DENSITY RESIDENTIAL	1.24	2	25	40	40	20	20	35,000	145	35,000	20%	75%
SINGLE-FAMILY RESIDENTIAL	R-18	MEDIUM DENSITY RESIDENTIAL	2.42	2	25	30	30	10	15	18,000	120	18,000	25%	75%
MULTI-FAMILY RESIDENTIAL	MR-8	HIGH DENSITY RESIDENTIAL	8	2	25	20	25	5	10	10,890	120	5,445	50%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
MULTI-FAMILY RESIDENTIAL	MR-14	HIGH DENSITY RESIDENTIAL	14	2	25	20	25	5	10	6,000	60	3,000	50%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
MULTI-FAMILY RESIDENTIAL	MR-21	HIGH DENSITY RESIDENTIAL	21	2	25	20	25	5	10	6,000	60	2,000	50%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
MULTI-FAMILY RESIDENTIAL	MR-43	HIGH DENSITY RESIDENTIAL	43	2	25	20	25	5	10	6,000	60	1,000	50%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
COMMERCIAL BUFFER	CB	COMMERCIAL USE	8	2	25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	6,000	60	6,000	60%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
COMMERCIAL CORE	CC	COMMERCIAL USE	2.42	2	25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	6,000	60	6,000	60%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
GENERAL COMMERCIAL	GC	COMMERCIAL USE	0	2	25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	0 - 3 - 10 - 25	6,000	300	6,000	60%	0 to .99 ac = 75% 1.00 to 1.99 ac = 70% 2.00 ac + = 65%
OPEN SPACE RECREATION	OSR	OPEN SPACE	0	1	18	60	60	30	30	5 ACRES	-	5 ACRES	2 ½%	2 ½%
OPEN SPACE CONSERVATION	OSC	OPEN SPACE	0	1	18	60	60	30	30	5 ACRES	-	5 ACRES	2 ½%	2 ½%

Table 4.2a IA, RTIMP, and Percent Vegetation Cover for Representative Land Uses in Maricopa County

Land Use Category	IA (inches)	RTIMP ** (percent)	Percent ** Veg. Cover	Gilbert Zoning Unit	Gilbert Description	Chandler Zoning Unit	Chandler Description	Mesa Zoning Unit	Mesa Description	Tempe Zoning Unit	Tempe Description	County Zoning Unit	County Description	Phoenix Zoning Unit	Phoenix Description
Agriculture	0.5*	0*	85*	AG	Agriculture	AG-1	Agriculture	AG	Agriculture	AG	Agriculture				
Very Low Density Residential	0.3*	5*	30*					R1-90	Single Residence			RURAL-190	190,000 sq. ft./dwelling unit	S-1	Ranch or Farm Residential, > 1 acre
								SR	Suburban Ranch			RURAL-70	70,000 sq. ft./dwelling unit	S-2	Ranch or Farm Commercial
				R1-43 1A/	Rural							RURAL-43	one acre/dwelling unit	RE-43	Single Family, 1 acre minimum
Low Density Residential	0.3*	15*	50*	R1-35 4/5	Rural Residential	SF-33	Single Family	R1-35	Single Residence			R1-35	Single Family Residential, 35,000 sq. ft./dwelling unit	RE-35	SF, 35,000 sq.ft min.
														RE-24	SF, 24,000 sq.ft min.
				R1-20	SF, Residential	SF-18	Single Family					R1-18	SFR, 18,000 sq. ft./unit	R1-18	SF, 18,000 sq.ft min.
				R1-15 1/3	" "			R1-15	Single Residence	R1-15	One Family Residential			R1-14	SF, 14,000 sq.ft min.
Medium Density Residential	0.25*	30*	50*	R1-10 1/4	" "	SF-10	Single Family	R1-9	Single Residence	R1-10	One Family Residential	R1-10	SFR, 10,000 sq. ft./unit	R1-10	SF, 10,000 sq.ft min.
				R1-8	" "					R1-8	One Family Residential	R1-8	SFR, 8,000 sq. ft./unit	R1-8	SF, 8,000 sq.ft min.
				R1-7 1/6	" "	SF-7	Single Family	R1-7	Single Residence	R1-7	One Family Residential				
								R1-6	Single Residence	R1-6	One Family Residential	R1-6	SFR, 6,000 sq. ft./unit	R1-6	SF, 6,000 sq.ft min.
								TCR-1	Town Center, Single Family	RO	Residence/Office			R-O	Res. Office
Multiple Family Residential	0.25*	45*	50*	R-2 1/22	Duplex	MF-1	Medium Density	R-2	Restricted Multiple Resid.	R-2	Multi-Family Residential	R-2	2 Family Residence	R-2	MF, 4,000 sq.ft./unit
				R-3	Multi-Family, Apartments	MF-2	Multi-Family	R-3	Limited Multiple Resid.	R-3R	Multi-Family Restricted	R-3	Multiple Family, Residential	R-3	MF, 3,000 sq.ft./unit
				R-4	Multi-Family, General	MF-3	High Density	R-4	General Multiple Resid.	R-3	Multi-Family Limited	R-4	Multiple Family, Residential	R-4	MF, 1,500 sq.ft./unit
				R-5	Townhouse Residential					R-4	Multi-Family General	R-5	Multiple Family, Residential	R-4A	MF, 1,000 sq.ft./unit
										R-Th	Townhouse			R-5	MF, 1,000 sq.ft./unit
				MH	Mobile Home	MH-1	Mobile Homes	TCR-2	TC, Restricted Multi-Res.	RMH	Mobile Home Residence	MHR	Manufactured Housing, Resid.	CP/BP	Business Park
				CTP	Commercial Trailer Park			TCR-3	TC, General Res.	MHS	Manufactured Housing Subd.			R-H	Resort District
										TP	Trailer Park				
Industrial	0.15*	55*	60*	I-1	Garden Type Industrial			M-1	Limited Industrial	I-1	Light Industrial			IND PARK	Industrial Park
				I-2	Light Industrial	I-1	Light Industrial			I-2	General Industrial	I-2	Light Industrial	A-1	Light Industrial
				I-3	General Industrial	I-2	General Industrial	M-2	General Industrial	I-3	Heavy Industrial	I-3	Heavy Industrial	A-2	Heavy Industrial
Commercial	0.1*	80*	75*	C-1	Light Commercial	C-1	Neighborhood Commercial	C-1	Neighborhood Comm.	CCR	Convenience Commercial	C-1	Neighborhood Commercial	C-1	Neighborhood Commercial
				C-2	General Commercial	C-2	Community Commercial	C-2	Limited Comm.	C-1	Neighborhood Commercial	C-2	Intermediate Commercial	C-2	Intermediate Commercial
				C-3	Central Commercial	C-3	Regional Commercial	C-3	General Comm.	C-2	General Commercial	C-3	General Commercial	C-3	General Commercial
				RS	Residential Services			OS	Office-Sercives	CCD	Central Comm. District	C-O	Commercial Office	C-O	Commercial Office
				RCC	Residential Conveniences			TCC	TC,High Intensity Mixed Use					HR	High Rise District
								TCB-1	TC, Limited Comm./General Manufacturing						
								TCB-2	TC, General Comm./ Light Manufacturing						
				MISCELLANEOUS CATEGORIES: These zoning units should be evaluated on a case by case basis.											
				PAD	Planned Area Development	PAD	Planned Area Development			S	Private School	PD	Planned Development Overlay	PAD	Planned Area Development
				PSC-1	Planned Neighborhood Shopping										
				PSC-2	Planned Shopping Center							CS	Planned Shopping Center	PSC	Planned Shopping Center
				IB	Industrial Buffer										
						PCO	Planned C Offices	PEP	Planned Employment Park						
								PF	Public Facilities			SU	Special Uses		
												SC	Senior Citizen Overlay	PCD	Planned Community Development
												NUP	Neighborhood Plan of Development		
												RUP	Residential Plan of Development		
												IUP	Industrial Plan of Development		
														R.O.W.	Right of Way
														P-1	Parking, Open
														P-2	Parking, Structures
														D.G	Dwelling Group

NOTES

* These values have been selected to fit many typical settings in Maricopa County. However, the engineer/hydrologist should ALWAYS evaluate the specific circumstances in any particular watershed for hydrological variations from these typical values.

** RTIMP = Percent Effective Impervious Area, Including R.O.W.

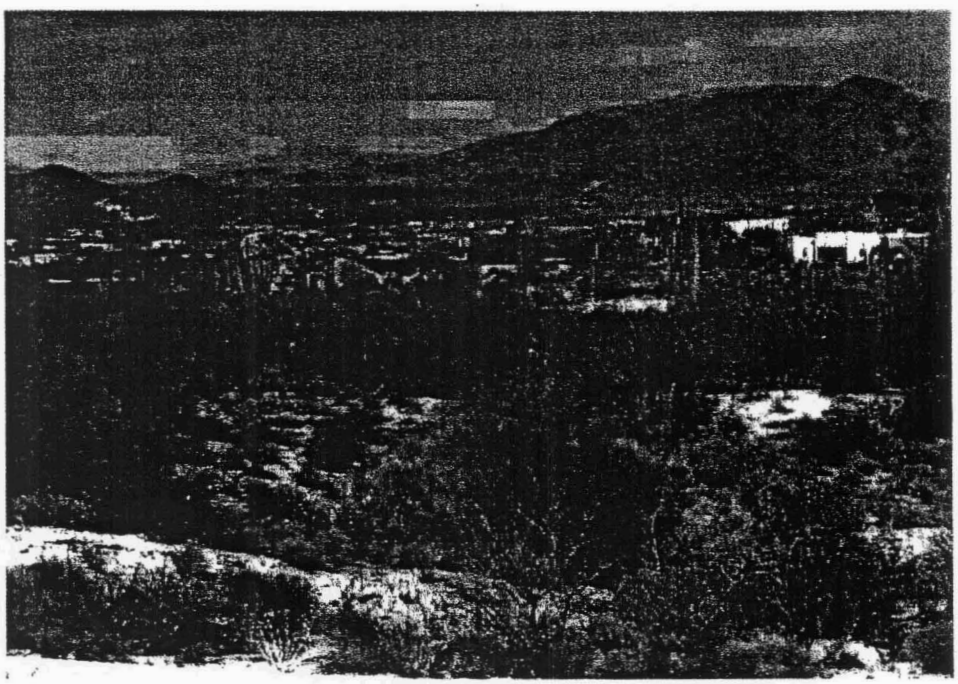
** Percent Veg. Cover = Percent vegetation cover for pervious area only

APPENDIX C EXCERTS FROM MARCH 2002 FDS OF ANDORA HILLS AND GALLOWAY WASHES

Flood Control District of Maricopa County
Phoenix, Arizona
April 2002

FLOODPLAIN DELINEATION STUDY
OF
ANDORA HILLS & GALLOWAY WASHES
FCD 99-14

TECHNICAL DATA NOTEBOOK
VOLUME 1 of 2



Submitted by:

JE Fuller / Hydrology and Geomorphology, Inc.
6101 S. Rural Road, Suite 110
Tempe, Arizona 85283
(480) 752-2124

on behalf of:

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, AZ 85009
(602) 506-1501

A285.014.001

4.2.4 Statistical Parameters

4.2.4.1 Precipitation Statistics:

Precipitation depth-duration-frequency statistics published by the National Oceanic and Atmospheric Administration[11] were used for this study. The NOAA Atlas 2 is currently being revised; however, the revised atlas has not been approved for use by the FCDMC or any other local agency at this time.

4.2.4.2 Discharge Statistics:

Streamflow statistics are published by the USGS for Cave Creek near Cave Creek (ID 09512300) in *Statistical Summaries of Streamflow Data and Characteristics of Drainage Basins for Selected Streamflow-Gaging Stations in Arizona Through Water Year 1996*[12]. Streamflow statistics are also published by the Flood Control District of Maricopa County in *Annual Hydrologic Data Report, Volume II Surface Water Data, Water Year 1998*[5]. Both of the above publications present the results of log-Pearson Type II analyses for the two gauging stations noted in section 4.2.3.2.

The streamflow statistics for the two gauges located on Cave Creek, which are presented in the above two publications, were not used to develop the peak discharge estimates used in this study for Galloway Wash because the Galloway Wash study area is much smaller (between 1 and 21 square miles compared to 83 and 121 square miles). However, these statistics were used as a means to verify the HEC-1 results and to maintain regional consistency.

4.2.5 Precipitation and Runoff

4.2.5.1 Historical Precipitation Records

The NWS Carefree, Arizona precipitation gauge (021282) is located at the Carefree Airport (see Figure 4.1-1) at an approximate elevation of 2510 feet msl. Monthly statistics based on over 37 years of record are presented in Table 4.2.5.1-1 below.

d

Table 4.2.5.1-1: Monthly Precipitation Summary for Carefree, Arizona (021282)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Precip. (in.)	1.43	1.36	1.70	0.60	0.16	0.12	1.29	1.69	1.15	1.10	1.11	1.55	13.26

The FCDMC Carefree Ranch precipitation gauge (#4930) is located approximately 5 miles northeast of the Carefree Airport in Section 16, Township 6 North, Range 4 East at an approximate elevation of 3200 feet msl (see Figure 4.1-1). Monthly statistics based on 12 years of record through November 1999 are presented in Table 4.2.5.1-2 below.

Table 4.2.5.1-2: Monthly Precipitation Summary for Carefree Ranch (#4930)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Precip. (in.)	2.22	1.56	1.58	0.96	0.16	0.04	0.77	1.47	0.89	0.59	0.80	1.04	12.08

4.2.5.2 Historic Flooding

The distribution of annual peak flow data from the two Cave Creek gauges is presented in Table 4.2.5.2-1 (next page). The data in the tables in Section 4.2.5 show the seasonal variability of rainfall and runoff patterns in the region surrounding the study area. In general, the study area experiences two distinct precipitation seasons; summer monsoons (July-October) and winter frontal storms (December-March).

The monsoon season precipitation events tend to be convective and relatively shorter duration but more intense than the winter storms, and are usually highly variable spatially and temporally. The winter storms tend to be frontal and relatively longer duration, but less intense than the summer storms, and tend to have less spatial and temporal variability throughout the area impacted by the storm. As Table 4.2.5-3 demonstrates, significant runoff can occur as a result of storms occurring during either of the two general seasons.

In the region surrounding the study area, it is generally observed that the smaller watersheds (less than 5 square miles) tend to yield the largest peak flows as a result of the more intense, short duration storm events. Likewise, the larger basins (greater than 10 square miles) tend to yield the largest peak flows as a result of the storms having greater spatial and temporal distribution than the summer storms.

4.2.5.3 Rainfall Depth and Distribution

The storm frequencies used in the HEC-1 modeling for this project include the 100-year 24-hour storm and the 100-year 6-hour storm. The SCS Type II distribution was used for the 100-year 24-hour storm. JD records were used to define the index storm distributions for the 100-year 6-hour storm as defined in Table 2.4 and Figure 2.17 of the FCDMC's *Drainage Design Manual, Volume I*[6].

Table 4.2.5.2-1: Distribution of Annual Peak Flows
(Discharge shown in cfs with date of discharge underneath)

Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
Cave Creek near Cave Creek (09512300), 39 years of record											
3380 (10/5/95)	279 (2/28/97)	1420 (3/3/83)				610 (7/16/65)	148 (8/9/84)	332 (9/7/96)	132 (10/7/93)	856 (11/2/74)	280 (12/16/61)
13800 (1/8/93)	1260 (2/9/76)	4780 (3/1/91)				1350 (7/22/86)	170 (8/21/88)	696 (9/17/61)	1200 (10/2/81)		910 (12/27/84)
		7500 (3/2/78)				1900 (7/24/90)	364 (8/4/71)	1800 (9/6/67)	3950 (10/19/72)		6000 (12/22/65)
						3950 (7/17/72)	1390 (8/5/74)	2700 (9/5/70)	8570 (10/29/59)		6900 (12/18/78)
							1510 (8/6/63)	5680 (9/12/58)			12400 (12/19/67)
							3120 (8/2/64)				
							3590 (8/5/59)				
							4680 (8/22/92)				
Cave Creek below Cottonwood Creek (09512280), 20 years of record											
Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
173 (1/5/89)	7020 (2/19/80)	19 (3/6/81)				964 (7/16/90)	594 (8/9/84)	124 (9/11/96)		682 (11/15/93)	1470 (12/27/84)
3100 (10/5/95)		118 (3/3/87)					3460 (8/23/92)	476 (9/11/97)		746 (11/26/85)	
9200 (1/8/93)		617 (3/15/82)								840 (11/1/87)	
		709 (3/28/98)								2720 (11/30/82)	
		3900 (3/1/91)									

Average 100-year 24 hour and 100-year 6-hour point rainfall values were determined by overlaying the watershed boundary onto the precipitation isopluvial maps published in the FCDMC's *Drainage Design Manual, Volume I*[6]. Table 4.2.5.3-1 presents the resulting point rainfall values. Detailed precipitation frequency values for Galloway Wash are presented in Appendix D.1.

Table 4.2.5.3-1: Point Precipitation Values for Galloway Wash	
Storm Frequency & Duration	Point Precipitation Inches
100-year 24-hour	4.8
100-year 6-hour	3.5

4.2.5.4 Areal Precipitation Reduction

The point rainfall value for the 100-year 6-hour storm was adjusted using the depth-area reduction relationship developed by the U.S. Army Corps of Engineers for the August 19, 1954 Queen Creek, Arizona storm as depicted in Table 2.2 in the FCDMC's *Drainage Design Manual, Volume I.* The point rainfall value for the 100-year 24-hour storm was adjusted using the depth-area reduction relationship published by the National Weather Service (NWS) in HYDRO-40[15] and presented in Figure 2.1a of the *Drainage Design Manual, Volume I.*

Simulation of areal reduction of point rainfall depths within the HEC-1 models is accomplished using the JD record option. Table 4.2.5.3-1 below presents a summary of areally reduced point rainfall depths used in the HEC-1 models.

Table 4.2.5.4-1: Summary of Areal Reduction Values for Index Storms Used in JD Records		
Area (square miles)	**Rainfall (inches)**	**Temporal Distribution**
100-Year 24-Hour Storm		
0.01	4.80	SCS Type II
1	4.78	SCS Type II
10	4.51	SCS Type II
20	4.37	SCS Type II
70	4.11	SCS Type II
100-Year 6-Hour Storm		
.01	3.50	Maricopa County Pattern 1
.5	3.48	Maricopa County Pattern 1
2.8	3.43	Maricopa County Pattern 2
16	3.23	Maricopa County Pattern 3
90	2.84	Maricopa County Pattern 4

4.2.5.5 Comparison to Historical Recorded Extremes

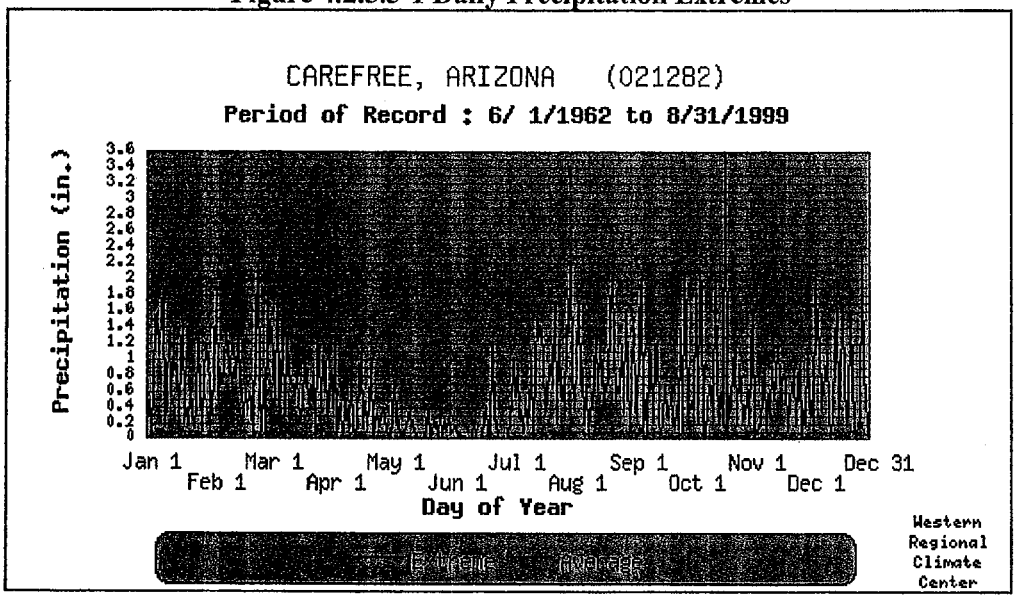
Extreme value data for the FCDMC Carefree Ranch precipitation gauge (#4930) are presented in Table 4.2.5.5-1 below. The data in the table represent the most extreme events measured at that gauge site for the period beginning July 1, 1985 and ending April, 1998. These data were downloaded from the FCDMC's Flood Warning internet web site (http://www.fcd.maricopa.gov/alert/alert.htm).

Table 4.2.5.5-1: Extreme Precipitation Events Recorded at FCDMC Carefree Ranch Gauge (4930)					
Number of Events >1" / 24Hours	Number of Events >2" / 24Hours	Number of Events >3" / 24Hours	Greatest 15-Minute Depth (in)*	Greatest 1-Hour Depth (in)*	Greatest 3- Hour Depth (in)*
38	3	0	0.98"	1.61"	1.85"

* For the period beginning December 1987 and ending April 1998.

Extreme value data for the NWS Carefree precipitation gauge (021282) are presented in Figure 4.2.5.5-1 (next page). The data in this figure represent the maximum daily precipitation recorded for each day of the year between June 1, 1962 and August 31, 1999. The maximum daily precipitation recorded, according to the figure, appears to be approximately 3.6 inches and occurred at about the middle of October.

Figure 4.2.5.5-1 Daily Precipitation Extremes



This figure demonstrates that extreme precipitation events in the project area tend to occur between about the end of July and the end of October, and between the beginning of December and about the first week of March. This trend is also observed in Figures 4.2.5.5-2 and 4.2.5.5-3 (next page). These figures present graphically the probability of 2 inches and 3 inches of rain, respectively, falling during a one-day period. The figures also show the expected time of year, having a probability greater than zero, which would receive two or three inches of precipitation in one day.

The estimates of the 100-year 24-hour and the 100-year 6-hour point rainfall values (i.e., 4.8" and 3.5" respectively) are greater than any one-day event recorded at the two precipitation gauges which are located in the study area. The greatest one-day precipitation total recorded during the

36-year period of record at the NWS Carefree gauge site is 3.6 inches. At the FCDMC Carefree Ranch gauge location, three precipitation events were recorded during the approximately 13 years of record for this gauge which had 24-hour totals in excess of two inches, and no precipitation events were recorded during the period of record with 24-hour totals exceeding three inches.

Figure 4.2.5.5-2 Probability and Time of Year of 2" of Precipitation in One Day

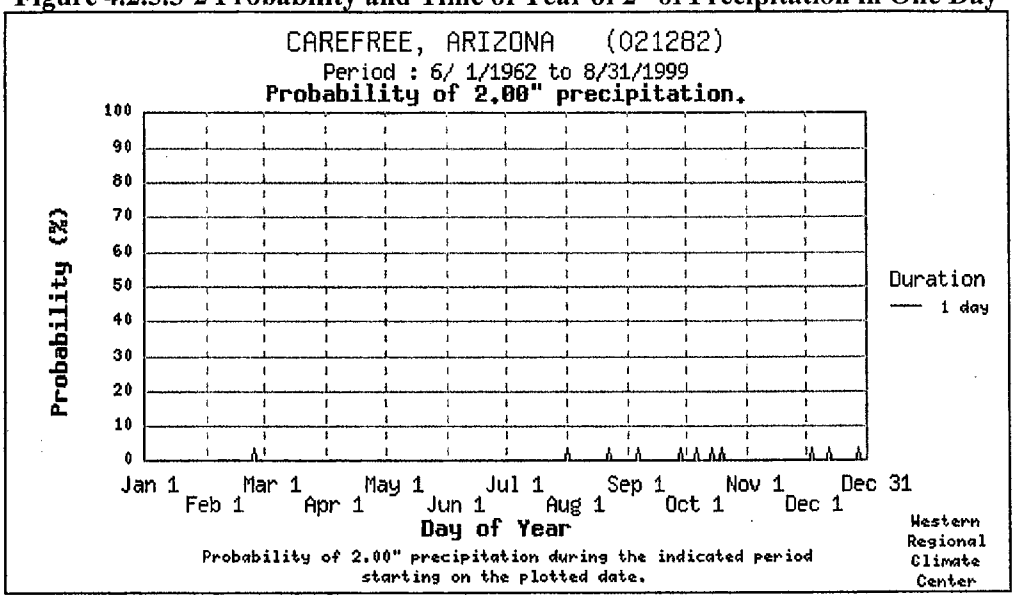
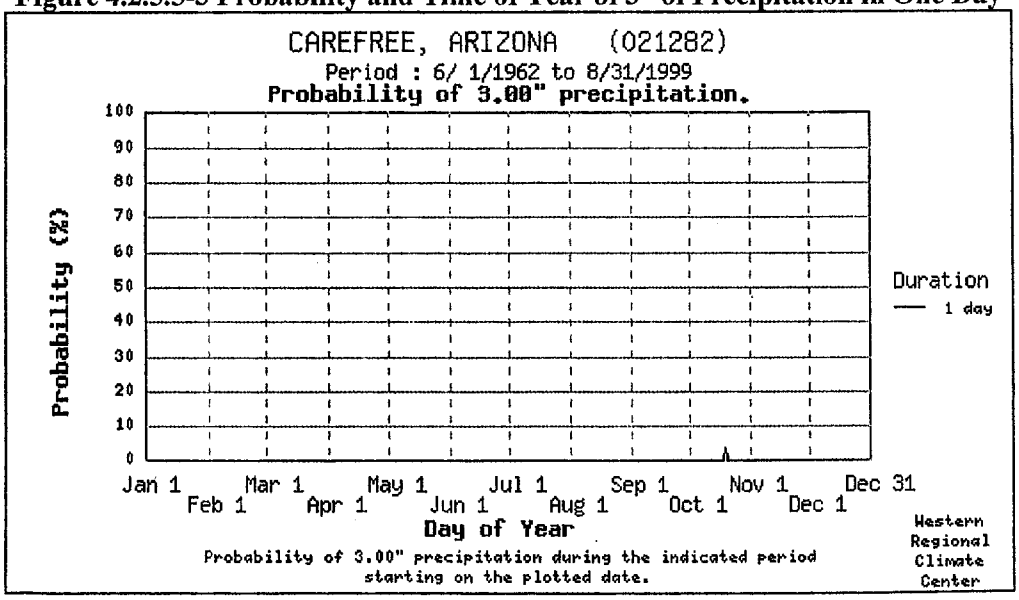
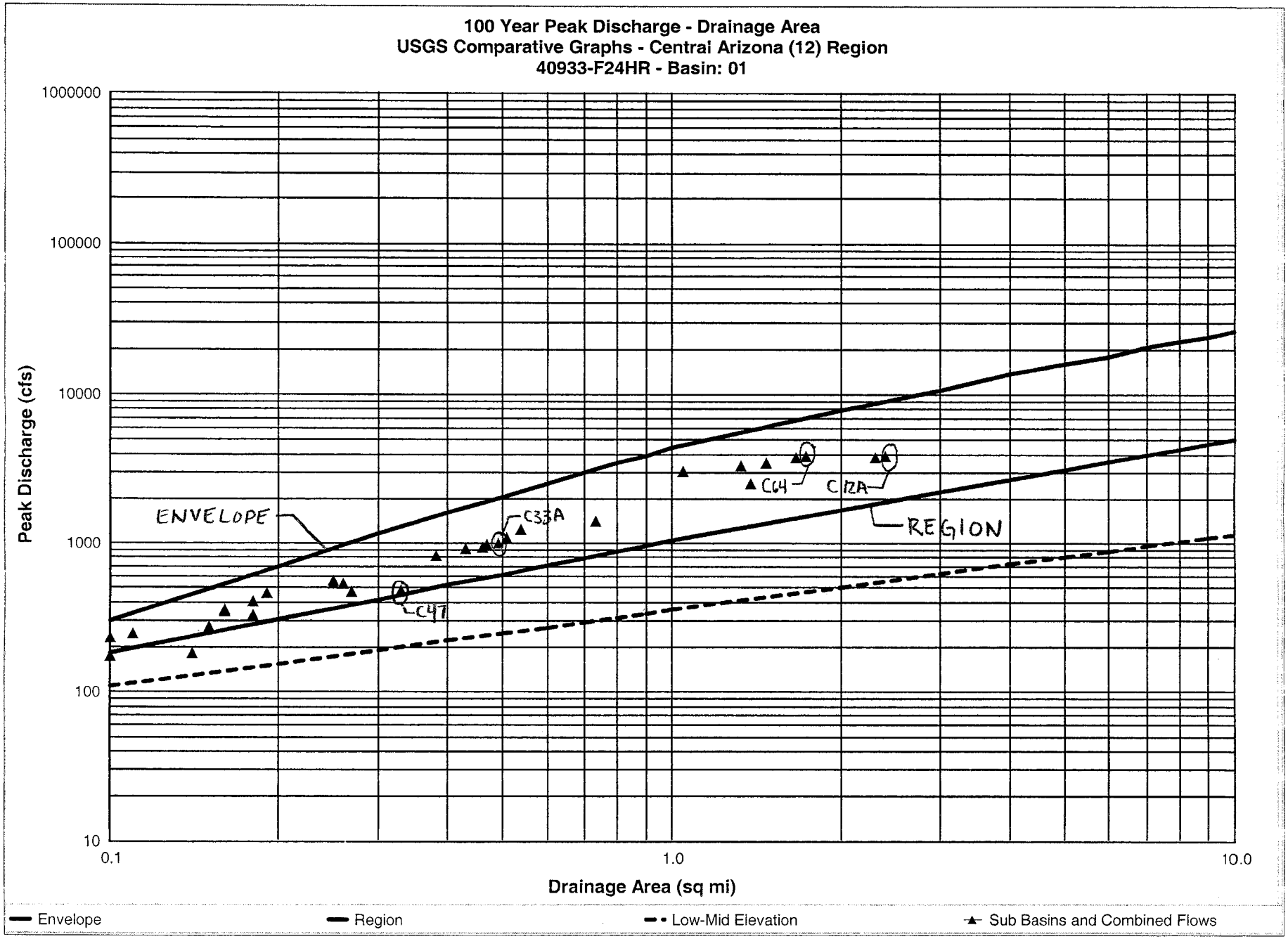
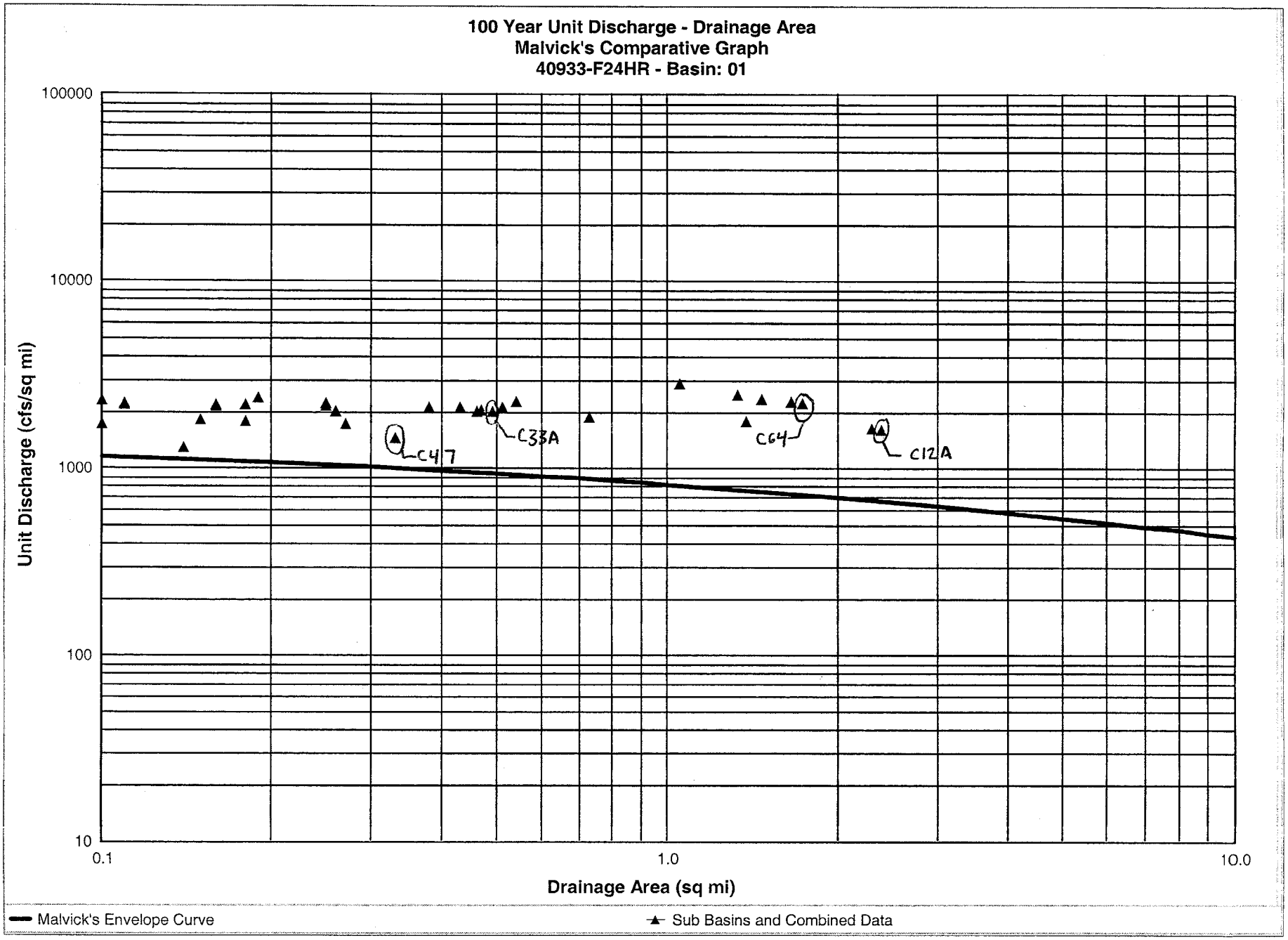


Figure 4.2.5.5-3 Probability and Time of Year of 3" of Precipitation in One Day



APPENDIX D VERIFICATION DOCUMENTATION


100 Year Peak Discharge - Drainage Area
USGS Comparative Graphs - Central Arizona (12) Region
40933-F24HR - Basin: 01
Peak Discharge (cfs)
1000000
100000
10000
1000
100
10
0.1
1.0
10.0
Drainage Area (sq mi)
ENVELOPE
REGION
C33A
C47
C64
C12A
Envelope
Region
Low-Mid Elevation
Sub Basins and Combined Flows


100 Year Unit Discharge - Drainage Area
Malvick's Comparative Graph
40933-F24HR - Basin: 01
100000
10000
1000
100
10
Unit Discharge (cfs/sq mi)
0.1
1.0
10.0
Drainage Area (sq mi)
C47
C33A
C64
C12A
Malvick's Envelope Curve
Sub Basins and Combined Data

Computation

Job No.		No.	
Project	Cave Creek Drainage Master Plan	Computed	LAP
Date	5/14/2007	Subject	Hydrology
Checked		Date	
Task	Flow Verification of HEC-1: 100-Year, 24-hour	Sheet	
Of			

THIS STUDY:					PREVIOUS STUDIES:			REGIONAL REGRESSION:		STATISTICS:	
Location (HEC1 ID)	Area (sq. mi.)	Mean Basin Elev (ft)	HEC-1 Future (cfs)	Unit Q (cfs/sqmi)	2002 JEF cfs	Area (sq mi)	Unit Q (cfs/sqmi)	ADOT (cfs)	Unit Q (cfs/sqmi)	Mean	Std Dev
C12A	2.39	2494	3878	1623	2570	2.56	1004	3087	1292	1306	310
C33A	0.49	2294	993	2027	899	0.59	1524	907	1851	1800	255
C47	0.33	2304.5	487	1476	899	0.59	1524	637	1931	1643	250
C64	4.23	2178	3900	922	4140	4.91	843	4915	1162	976	166

APPENDIX E HEC-1 RESULTS AND DISKS/ELECTRONIC DATA FILES

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*          VERSION 4.1                  *
*                                       *
*  RUN DATE   20JUL07  TIME  06:28:59   *
*                                       *
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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  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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


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

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  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS WEST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: EW100-6.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 6-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
 15           ID   ******************************************************************************
 16           ID
 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    3.40    0.01
 23           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 24           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 25           PC   0.962   0.972   0.983   0.991   1.000
 26           JD   3.378    0.50
 27           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 28           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 29           PC   0.962   0.972   0.983   0.991   1.000
 30           JD   3.314    2.80
 31           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 32           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 33           PC   0.950   0.963   0.975   0.988   1.000
 34           JD   3.135    16.0
 35           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 36           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 37           PC   0.946   0.960   0.973   0.987   1.000
 38           JD   2.761    90.0
 39           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 40           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 41           PC   0.927   0.945   0.964   0.982   1.000
 42           JD   1.938   500.0
 43           PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
 44           PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
 45           PC   0.907   0.930   0.954   0.977   1.000

 46           KK  SUB-23   BASIN
 47           BA   0.523
 48           LG    0.31    0.20    7.00    0.11      32
 49           UC   0.292   0.187
 50           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 51           UA     100
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  58          KK  SUB-25   BASIN
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  64          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

   46       SUB-23
                 .
                 .
   52            .       SUB-24
                 .           .
                 .           .
   58            .           .       SUB-25

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                          SUB-23     1419.     4.17        140.         35.          13.       .52

          HYDROGRAPH AT
+                          SUB-24      683.     4.13         68.         17.           6.       .27

          HYDROGRAPH AT
+                          SUB-25     1891.     4.20        225.         56.          20.       .94

 *** NORMAL END OF HEC-1 ***
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*            JUN   1998                *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   20JUL07  TIME  06:30:17  *
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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         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


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

  1           ID   Project ID: 40933-EWEST24HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS WEST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: EW100-24.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 24-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
 15           ID   ******************************************************************************
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 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    4.60    0.01
 23           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 24           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 25           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 26           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 27           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 28           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 29           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 30           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 31           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 32           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 33           JD   4.324   10.00
 34           JD   4.140   30.00
 35           JD   3.956   60.00
 36           JD   3.892   90.00
 37           JD   3.836  120.00
 38           JD   3.795  150.00
 39           JD   3.680  300.00
 40           JD   3.588  500.00

 41           KK  SUB-23   BASIN
 42           BA   0.523
 43           LG    0.31    0.20    7.00    0.11      32
 44           UC   0.292   0.187
 45           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 46           UA     100

 47           KK  SUB-24   BASIN
 48           BA   0.267
 49           LG    0.35    0.24    7.00    0.12      28
 50           UC   0.263   0.218
 51           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
```

```
          52          UA     100
1                                                HEC-1 INPUT                                                          PAGE  2

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

          53          KK  SUB-25   BASIN
          54          BA   0.937
          55          LG    0.35    0.35    7.00    0.12      28
          56          UC   0.363   0.236
          57          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          58          UA     100
          59          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    41      SUB-23
                 .
                 .
    47           .      SUB-24
                 .           .
                 .           .
    53           .           .      SUB-25

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION          STATION        FLOW     PEAK                                           AREA      STAGE     MAX STAGE
+                                                                6-HOUR      24-HOUR      72-HOUR
        HYDROGRAPH AT
+                          SUB-23        1158.   12.17          128.         38.          14.        .52
        HYDROGRAPH AT
+                          SUB-24         558.   12.13           62.         18.           7.        .27
        HYDROGRAPH AT
+                          SUB-25        1780.   12.20          205.         60.          22.        .94

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

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1****************************************
*                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            JUN   1998                *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   20JUL07  TIME  07:56:12  *
*                                      *
****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X    X         XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X    X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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


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

   1          ID   Project ID: 40933-FWEST6HR - Major Basin: 01 - Return Period: 100 Years
   2          ID
   3          ID   CAVECREEK DRAINAGE MASTER PLAN
   4          ID   HYDROLOGY OF UNDELINEATED AREAS WEST OF CAVE CREEK.
   5          ID   FCD CONTRACT #2004C072
   6          ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   7          ID   PREPARED BY HDR ENGINEERING-JULY 2007
   8          ID   FILE NAME: FW100-6.DAT
   9          ID
  10          ID   ******************************************************************************
  11          ID   100-YEAR, 6-HOUR STORM EVENT
  12          ID   MULTIPLE STORM EVENT
  13          ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
  14          ID   FUTURE LAND USE FROM ZONING MAP
  15          ID   ******************************************************************************
  16          ID
  17          ID
  18          ID
              *DIAGRAM
  19          IT       2                    2000
  20          IO       3
  21          IN      15
  22          JD    3.40    0.01
  23          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  24          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  25          PC   0.962   0.972   0.983   0.991   1.000
  26          JD   3.378    0.50
  27          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  28          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  29          PC   0.962   0.972   0.983   0.991   1.000
  30          JD   3.314    2.80
  31          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
  32          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
  33          PC   0.950   0.963   0.975   0.988   1.000
  34          JD   3.135    16.0
  35          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
  36          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
  37          PC   0.946   0.960   0.973   0.987   1.000
  38          JD   2.761    90.0
  39          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
  40          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
  41          PC   0.927   0.945   0.964   0.982   1.000
  42          JD   1.938   500.0
  43          PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
  44          PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
  45          PC   0.907   0.930   0.954   0.977   1.000

  46          KK  SUB-23   BASIN
  47          BA   0.523
  48          LG    0.31    0.20    7.00    0.11      32
  49          UC   0.283   0.181
  50          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  51          UA     100
```

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

  52          KK  SUB-24   BASIN
  53          BA   0.267
  54          LG    0.32    0.24    7.00    0.11      31
  55          UC   0.246   0.203
  56          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  57          UA     100

  58          KK  SUB-25   BASIN
  59          BA   0.937
  60          LG    0.34    0.35    7.00    0.12      28
  61          UC   0.383   0.252
  62          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  63          UA     100
  64          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    46      SUB-23
                 .
                 .
    52           .      SUB-24
                 .           .
                 .           .
    58           .           .      SUB-25


1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                          SUB-23    1435.   4.17         140.         35.          13.       .52

          HYDROGRAPH AT
+                          SUB-24     718.   4.13          70.         18.           6.       .27

          HYDROGRAPH AT
+                          SUB-25    1844.   4.23         225.         56.          20.       .94


 *** NORMAL END OF HEC-1 ***
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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   20JUL07  TIME  07:56:58   *
*                                       *
*****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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


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

  1           ID   Project ID: 40933-FWEST24HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS WEST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: FW100-24.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 24-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   FUTURE LAND USE FROM ZONING MAP
 15           ID   ******************************************************************************
 16           ID
 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    4.60    0.01
 23           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 24           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 25           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 26           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 27           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 28           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 29           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 30           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 31           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 32           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 33           JD   4.324   10.00
 34           JD   4.140   30.00
 35           JD   3.956   60.00
 36           JD   3.892   90.00
 37           JD   3.836  120.00
 38           JD   3.795  150.00
 39           JD   3.680  300.00
 40           JD   3.588  500.00

 41           KK  SUB-23   BASIN
 42           BA   0.523
 43           LG    0.31    0.20    7.00    0.11      32
 44           UC   0.283   0.181
 45           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 46           UA     100

 47           KK  SUB-24   BASIN
 48           BA   0.267
 49           LG    0.32    0.24    7.00    0.11      31
 50           UC   0.246   0.203
 51           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
```

```
          52          UA     100
1                                                HEC-1 INPUT                                                          PAGE  2

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

          53          KK  SUB-25   BASIN
          54          BA   0.937
          55          LG    0.34    0.35    7.00    0.12      28
          56          UC   0.383   0.252
          57          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          58          UA     100
          59          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    41      SUB-23
                 .
                 .
    47           .      SUB-24
                 .           .
                 .           .
    53           .           .      SUB-25


1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                     TIME IN HOURS,  AREA IN SQUARE MILES

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

          HYDROGRAPH AT
+                            SUB-23            1170.    12.17         128.         38.          14.       .52
          HYDROGRAPH AT
+                            SUB-24             584.    12.13          64.         19.           7.       .27
          HYDROGRAPH AT
+                            SUB-25            1728.    12.23         206.         60.          22.       .94


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

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   24JUL07  TIME  06:41:28   *
*                                       *
*****************************************
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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
```

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


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

  1           ID   Project ID: 40933-EEAST6HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS EAST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: EE100-6.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 6-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
 15           ID   ******************************************************************************
 16           ID
 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    3.40    0.01
 23           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 24           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 25           PC   0.962   0.972   0.983   0.991   1.000
 26           JD   3.378    0.50
 27           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 28           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 29           PC   0.962   0.972   0.983   0.991   1.000
 30           JD   3.314    2.80
 31           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 32           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 33           PC   0.950   0.963   0.975   0.988   1.000
 34           JD   3.135    16.0
 35           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 36           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 37           PC   0.946   0.960   0.973   0.987   1.000
 38           JD   2.761    90.0
 39           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 40           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 41           PC   0.927   0.945   0.964   0.982   1.000
 42           JD   1.938   500.0
 43           PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
 44           PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
 45           PC   0.907   0.930   0.954   0.977   1.000

 46           KK  SUB-50   BASIN
 47           BA   0.220
 48           LG    0.35    0.35    6.60    0.14      24
 49           UC   0.225   0.154
 50           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 51           UA     100
```

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

  52          KK  SUB-51   BASIN
  53          BA   0.253
  54          LG    0.33    0.31    4.55    0.34       6
  55          UC   0.338   0.350
  56          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  57          UA     100

  58          KK  SUB-54   BASIN
  59          BA   0.094
  60          LG    0.30    0.13   10.10    0.03       5
  61          UC   0.279   0.283
  62          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  63          UA     100

  64          KK  SUB-65   BASIN
  65          BA   0.184
  66          LG    0.31    0.19    8.00    0.08       6
  67          UC   0.367   0.352
  68          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  69          UA     100

  70          KK     R65   ROUTE   BASIN
  71          RS       9    FLOW      -1
  72          RC   0.053   0.045   0.053    4576  0.0131  924.00
  73          RX     0.0    10.3    19.3    25.9    32.9    53.6    89.4   104.0
  74          RY   924.0   922.0   920.0   918.0   918.0   920.0   922.0   924.0

  75          KK  SUB-66   BASIN
  76          BA   0.183
  77          LG    0.33    0.15    8.80    0.06       2
  78          UC   0.417   0.406
  79          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  80          UA     100

  81          KK  SUB-68   BASIN
  82          BA   0.123
  83          LG    0.32    0.13   10.10    0.03       3
  84          UC   0.367   0.411
  85          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  86          UA     100

  87          KK     C68
  88          KM   COMBINE R65, SUB-66, AND SUB-68
  89          HC       3
  90          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    46     SUB-50
                .
                .
    52          .      SUB-51
                .          .
                .          .
    58          .          .      SUB-54
                .          .          .
                .          .          .
    64          .          .          .      SUB-65
                .          .          .           V
                .          .          .           V
    70          .          .          .         R65
                .          .          .           .
                .          .          .           .
    75          .          .          .           .      SUB-66
                .          .          .           .          .
                .          .          .           .          .
    81          .          .          .           .          .      SUB-68
                .          .          .           .          .          .
                .          .          .           .          .          .
    87          .          .          .         C68.......................
```

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB-50	624.	4.10	52.	13.	5.	.22		

+	HYDROGRAPH AT	SUB-51	433.	4.20	46.	12.	4.	.25
+	HYDROGRAPH AT	SUB-54	228.	4.17	26.	6.	2.	.09
+	HYDROGRAPH AT	SUB-65	372.	4.23	45.	11.	4.	.18
+	ROUTED TO	R65	354.	4.40	45.	11.	4.	.18
+	HYDROGRAPH AT	SUB-66	345.	4.27	46.	11.	4.	.18
+	HYDROGRAPH AT	SUB-68	242.	4.23	33.	8.	3.	.12
+	3 COMBINED AT	C68	873.	4.33	123.	31.	11.	.49

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

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            JUN   1998                *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   24JUL07  TIME  06:43:38  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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


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

   1          ID   Project ID: 40933-EEAST24HR - Major Basin: 01 - Return Period: 100 Years
   2          ID
   3          ID   CAVECREEK DRAINAGE MASTER PLAN
   4          ID   HYDROLOGY OF UNDELINEATED AREAS EAST OF CAVE CREEK.
   5          ID   FCD CONTRACT #2004C072
   6          ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   7          ID   PREPARED BY HDR ENGINEERING-JULY 2007
   8          ID   FILE NAME: EE100-24.DAT
   9          ID
  10          ID   ******************************************************************************
  11          ID   100-YEAR, 24-HOUR STORM EVENT
  12          ID   MULTIPLE STORM EVENT
  13          ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
  14          ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
  15          ID   ******************************************************************************
  16          ID
  17          ID
  18          ID
              *DIAGRAM
  19          IT       2                    2000
  20          IO       3
  21          IN      15
  22          JD    4.60    0.01
  23          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
  24          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
  25          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
  26          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
  27          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  28          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  29          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  30          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
  31          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
  32          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
  33          JD   4.324   10.00
  34          JD   4.140   30.00
  35          JD   3.956   60.00
  36          JD   3.892   90.00
  37          JD   3.836  120.00
  38          JD   3.795  150.00
  39          JD   3.680  300.00
  40          JD   3.588  500.00

  41          KK  SUB-50   BASIN
  42          BA   0.220
  43          LG    0.35    0.35    6.60    0.14      24
  44          UC   0.225   0.154
  45          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  46          UA     100

  47          KK  SUB-51   BASIN
  48          BA   0.253
  49          LG    0.33    0.31    4.55    0.34       6
  50          UC   0.338   0.350
  51          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
```

```
 52          UA     100
1                                          HEC-1 INPUT                                                          PAGE  2

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

 53          KK  SUB-54   BASIN
 54          BA   0.094
 55          LG    0.30    0.13   10.10    0.03       5
 56          UC   0.279   0.283
 57          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 58          UA     100

 59          KK  SUB-65   BASIN
 60          BA   0.184
 61          LG    0.31    0.19    8.00    0.08       6
 62          UC   0.367   0.352
 63          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 64          UA     100

 65          KK     R65   ROUTE   BASIN
 66          RS       9    FLOW      -1
 67          RC   0.053   0.045   0.053    4576  0.0131 1924.00
 68          RX     0.0    10.3    19.3    25.9    32.9    53.6    89.4   104.0
 69          RY   924.0   922.0   920.0   918.0   918.0   920.0   922.0   924.0

 70          KK  SUB-66   BASIN
 71          BA   0.183
 72          LG    0.33    0.15    8.80    0.06       2
 73          UC   0.417   0.406
 74          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 75          UA     100

 76          KK  SUB-68   BASIN
 77          BA   0.123
 78          LG    0.32    0.13   10.10    0.03       3
 79          UC   0.367   0.411
 80          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 81          UA     100

 82          KK     C68
 83          KM   COMBINE R65, SUB-66, AND SUB-68
 84          HC       3
 85          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

  41      SUB-50
               .
               .
  47           .      SUB-51
               .          .
               .          .
  53           .          .      SUB-54
               .          .          .
               .          .          .
  59           .          .          .      SUB-65
               .          .          .          V
               .          .          .          V
  65           .          .          .         R65
               .          .          .          .
               .          .          .          .
  70           .          .          .          .      SUB-66
               .          .          .          .          .
               .          .          .          .          .
  76           .          .          .          .          .      SUB-68
               .          .          .          .          .          .
               .          .          .          .          .          .
  82           .          .          .         C68.......................

1
                                          RUNOFF SUMMARY
                                     FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
+   OPERATION        STATION       FLOW     PEAK                                           AREA      STAGE     MAX STAGE
                                                          6-HOUR      24-HOUR     72-HOUR
    HYDROGRAPH AT
+                    SUB-50        510.    12.10          47.          14.          5.        .22
    HYDROGRAPH AT
+                    SUB-51        356.    12.20          39.          10.          4.        .25
    HYDROGRAPH AT
+                    SUB-54        187.    12.17          27.           7.          3.        .09
```

	HYDROGRAPH AT	SUB-65	306.	12.23	42.	11.	4.	.18
+	ROUTED TO	R65	306.	12.27	42.	11.	4.	.18
+	HYDROGRAPH AT	SUB-66	285.	12.27	45.	11.	4.	.18
+	HYDROGRAPH AT	SUB-68	199.	12.23	35.	9.	3.	.12
+	3 COMBINED AT	C68	778.	12.27	120.	31.	11.	.49

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

```
1****************************************
*                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            JUN   1998                *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   24JUL07  TIME  06:48:42  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X    X         XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X    X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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


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

  1           ID   Project ID: 40933-FEAST6HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS EAST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: FE100-6.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 6-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   FUTURE LAND USE FROM ZONING MAP
 15           ID   ******************************************************************************
 16           ID
 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    3.40    0.01
 23           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 24           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 25           PC   0.962   0.972   0.983   0.991   1.000
 26           JD   3.378    0.50
 27           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 28           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 29           PC   0.962   0.972   0.983   0.991   1.000
 30           JD   3.314    2.80
 31           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
 32           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 33           PC   0.950   0.963   0.975   0.988   1.000
 34           JD   3.135    16.0
 35           PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 36           PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 37           PC   0.946   0.960   0.973   0.987   1.000
 38           JD   2.761    90.0
 39           PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 40           PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 41           PC   0.927   0.945   0.964   0.982   1.000
 42           JD   1.938   500.0
 43           PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
 44           PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
 45           PC   0.907   0.930   0.954   0.977   1.000

 46           KK  SUB-50   BASIN
 47           BA   0.220
 48           LG    0.30    0.19    6.60    0.13      29
 49           UC   0.221   0.151
 50           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 51           UA     100
```

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

 52           KK  SUB-51   BASIN
 53           BA   0.253
 54           LG    0.30    0.33    4.55    0.32       9
 55           UC   0.329   0.340
 56           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 57           UA     100

 58           KK  SUB-54   BASIN
 59           BA   0.094
 60           LG    0.30    0.13   10.10    0.03       5
 61           UC   0.275   0.279
 62           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 63           UA     100

 64           KK  SUB-65   BASIN
 65           BA   0.184
 66           LG    0.29    0.15    8.00    0.08       8
 67           UC   0.350   0.334
 68           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 69           UA     100

 70           KK     R65   ROUTE   BASIN
 71           RS       9    FLOW      -1
 72           RC   0.053   0.045   0.053    4576  0.0131  924.00
 73           RX     0.0    10.3    19.3    25.9    32.9    53.6    89.4   104.0
 74           RY   924.0   922.0   920.0   918.0   918.0   920.0   922.0   924.0

 75           KK  SUB-66   BASIN
 76           BA   0.183
 77           LG    0.30    0.15    8.80    0.06       5
 78           UC   0.413   0.402
 79           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 80           UA     100

 81           KK  SUB-68   BASIN
 82           BA   0.123
 83           LG    0.30    0.13   10.10    0.03       6
 84           UC   0.358   0.400
 85           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 86           UA     100

 87           KK     C68
 88           KM   COMBINE R65, SUB-66, AND SUB-68
 89           HC       3
 90           ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   46     SUB-50
               .
               .
   52          .      SUB-51
               .           .
               .           .
   58          .           .      SUB-54
               .           .           .
               .           .           .
   64          .           .           .      SUB-65
               .           .           .           V
               .           .           .           V
   70          .           .           .         R65
               .           .           .           .
               .           .           .           .
   75          .           .           .           .      SUB-66
               .           .           .           .           .
               .           .           .           .           .
   81          .           .           .           .           .      SUB-68
               .           .           .           .           .           .
               .           .           .           .           .           .
   87          .           .           .         C68.......................
```

1

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

+	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB-50	656.	4.10	58.	15.	5.	.22		

	HYDROGRAPH AT	SUB-51	451.	4.20	48.	12.	4.	.25
+	HYDROGRAPH AT	SUB-54	230.	4.17	26.	6.	2.	.09
+	HYDROGRAPH AT	SUB-65	388.	4.23	46.	12.	4.	.18
+	ROUTED TO	R65	371.	4.40	46.	12.	4.	.18
+	HYDROGRAPH AT	SUB-66	349.	4.27	47.	12.	4.	.18
+	HYDROGRAPH AT	SUB-68	246.	4.23	34.	8.	3.	.12
+	3 COMBINED AT	C68	902.	4.33	127.	32.	11.	.49

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

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            JUN  1998                 *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   24JUL07  TIME  06:50:32  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

1 HEC-1 INPUT PAGE 1

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

  1           ID   Project ID: 40933-FEAST24HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID   CAVECREEK DRAINAGE MASTER PLAN
  4           ID   HYDROLOGY OF UNDELINEATED AREAS EAST OF CAVE CREEK.
  5           ID   FCD CONTRACT #2004C072
  6           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  7           ID   PREPARED BY HDR ENGINEERING-JULY 2007
  8           ID   FILE NAME: FE100-24.DAT
  9           ID
 10           ID   ******************************************************************************
 11           ID   100-YEAR, 24-HOUR STORM EVENT
 12           ID   MULTIPLE STORM EVENT
 13           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 14           ID   FUTURE LAND USE FROM ZONING MAP
 15           ID   ******************************************************************************
 16           ID
 17           ID
 18           ID
              *DIAGRAM
 19           IT       2                    2000
 20           IO       3
 21           IN      15
 22           JD    4.60    0.01
 23           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 24           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 25           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 26           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 27           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 28           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 29           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 30           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 31           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 32           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 33           JD   4.324   10.00
 34           JD   4.140   30.00
 35           JD   3.956   60.00
 36           JD   3.892   90.00
 37           JD   3.836  120.00
 38           JD   3.795  150.00
 39           JD   3.680  300.00
 40           JD   3.588  500.00

 41           KK  SUB-50   BASIN
 42           BA   0.220
 43           LG    0.30    0.19    6.60    0.13      29
 44           UC   0.221   0.151
 45           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 46           UA     100

 47           KK  SUB-51   BASIN
 48           BA   0.253
 49           LG    0.30    0.33    4.55    0.32       9
 50           UC   0.329   0.340
 51           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
```

```
          52          UA     100
1                                                HEC-1 INPUT                                                          PAGE  2
       LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          53          KK  SUB-54   BASIN
          54          BA   0.094
          55          LG    0.30    0.13   10.10    0.03       5
          56          UC   0.275   0.279
          57          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          58          UA     100

          59          KK  SUB-65   BASIN
          60          BA   0.184
          61          LG    0.29    0.15    8.00    0.08       8
          62          UC   0.350   0.334
          63          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          64          UA     100

          65          KK     R65   ROUTE   BASIN
          66          RS       9    FLOW      -1
          67          RC   0.053   0.045   0.053    4576  0.0131  924.00
          68          RX     0.0    10.3    19.3    25.9    32.9    53.6    89.4   104.0
          69          RY   924.0   922.0   920.0   918.0   918.0   920.0   922.0   924.0

          70          KK  SUB-66   BASIN
          71          BA   0.183
          72          LG    0.30    0.15    8.80    0.06       5
          73          UC   0.413   0.402
          74          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          75          UA     100

          76          KK  SUB-68   BASIN
          77          BA   0.123
          78          LG    0.30    0.13   10.10    0.03       6
          79          UC   0.358   0.400
          80          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
          81          UA     100

          82          KK     C68
          83          KM   COMBINE R65, SUB-66, AND SUB-68
          84          HC       3
          85          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE       (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    41       SUB-50
                 .
                 .
    47           .       SUB-51
                 .           .
                 .           .
    53           .           .      SUB-54
                 .           .          .
                 .           .          .
    59           .           .          .      SUB-65
                 .           .          .          V
                 .           .          .          V
    65           .           .          .         R65
                 .           .          .          .
                 .           .          .          .
    70           .           .          .          .      SUB-66
                 .           .          .          .          .
                 .           .          .          .          .
    76           .           .          .          .          .      SUB-68
                 .           .          .          .          .          .
                 .           .          .          .          .          .
    82           .           .          .         C68.......................
1
                                                RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                                PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION          STATION            FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                                     6-HOUR      24-HOUR      72-HOUR
          HYDROGRAPH AT
+                            SUB-50             533.    12.10          53.          15.           6.        .22
          HYDROGRAPH AT
+                            SUB-51             370.    12.20          41.          11.           4.        .25
          HYDROGRAPH AT
+                            SUB-54             188.    12.17          27.           7.           3.        .09
```

	HYDROGRAPH AT	SUB-65	318.	12.23	44.	11.	4.	.18
+	ROUTED TO	R65	303.	12.40	44.	11.	4.	.18
+	HYDROGRAPH AT	SUB-66	287.	12.27	45.	12.	4.	.18
+	HYDROGRAPH AT	SUB-68	202.	12.23	35.	9.	3.	.12
+	3 COMBINED AT	C68	732.	12.33	123.	32.	12.	.49

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

```
1****************************************
*                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            JUN  1998                 *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   25JUL07  TIME  08:01:36  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

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

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


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

   1          ID   Project ID: 40933-E6HR - Major Basin: 01 - Return Period: 100 Years
   2          ID
   3          ID
   4          ID   CAVECREEK DRAINAGE MASTER PLAN
   5          ID   FLOODPLAIN DELINEATION STUDY OF CAVECREEK TRIBUTARIES, WILLOW SPRINGS WASH
   6          ID   TRIBUTARIES, GALLOWAY TRIBUTARIES, AND MORMAN GIRL WASH TRIBUTARIES.
   7          ID   FCD CONTRACT #2004C072
   8          ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   9          ID   PREPARED BY HDR ENGINEERING-July 2007
  10          ID   FILE NAME: E100-6.DAT
  11          ID
  12          ID   ******************************************************************************
  13          ID   100-YEAR, 6-HOUR STORM EVENT
  14          ID   MULTIPLE STORM EVENT
  15          ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
  16          ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
  17          ID   ******************************************************************************
  18          ID
  19          ID
  20          ID
  21          ID
              *DIAGRAM
  22          IT       2                    2000
  23          IO       3
  24          IN      15
  25          JD    3.40    0.01
  26          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  27          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  28          PC   0.962   0.972   0.983   0.991   1.000
  29          JD   3.378    0.50
  30          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  31          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  32          PC   0.962   0.972   0.983   0.991   1.000
  33          JD   3.314    2.80
  34          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
  35          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
  36          PC   0.950   0.963   0.975   0.988   1.000
  37          JD   3.135    16.0
  38          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
  39          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
  40          PC   0.946   0.960   0.973   0.987   1.000
  41          JD   2.761    90.0
  42          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
  43          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
  44          PC   0.927   0.945   0.964   0.982   1.000
  45          JD   1.938   500.0
  46          PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
  47          PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
  48          PC   0.907   0.930   0.954   0.977   1.000
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 49          KK  SUB14B   BASIN
 50          BA   0.267
             *
 51          LG    0.35    0.35    7.00    0.12       0
 52          UC   0.313   0.300
 53          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 54          UA     100
             *

 55          KK  SUB14C   BASIN
 56          BA   0.458
 57          LG    0.35    0.32    7.60    0.10       1
 58          UC   0.279   0.218
 59          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 60          UA     100
             *

 61          KK    C14C
 62          KM   COMBINE SUB-14B, AND SUB-14C
 63          HC       2
             *

 64          KK    R14C   ROUTE   REACH
 65          RS       4    FLOW      -1
 66          RC   0.053   0.045   0.053    3270  0.0130  246.00
 67          RX     0.0     4.8     9.6    14.5    39.4    78.3    94.4   110.1
 68          RY   246.0   244.0   242.0   240.0   240.0   242.0   244.0   246.0
             *

 69          KK  SUB14A   BASIN
 70          BA   0.180
 71          LG    0.35    0.30    8.00    0.08       3
 72          UC   0.233   0.191
 73          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 74          UA     100
             *

 75          KK    C14A
 76          KM   COMBINE R14C AND SUB-14A
 77          HC       2
             *

 78          KK  SUB19A   BASIN
 79          BA   0.111
 80          LG    0.35    0.32    7.60    0.10      19
 81          UC   0.208   0.201
 82          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 83          UA     100
             *
```



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

 84          KK  SUB19B   BASIN
 85          BA   0.257
 86          LG    0.35    0.35    7.00    0.12      29
 87          UC   0.250   0.220
 88          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 89          UA     100
             *

 90          KK  SUB19C   BASIN
 91          BA   0.105
 92          LG    0.35    0.33    7.30    0.11      30
 93          UC   0.204   0.199
 94          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 95          UA     100
             *

 96          KK    C19C
 97          KM   COMBINE C14A, SUB-19A, SUB-19B, AND SUB-19C
 98          HC       4
             *

 99          KK    R19C   ROUTE   REACH
100          RS       5    FLOW      -1
101          RC   0.053   0.045   0.053    4116  0.0114  204.00
102          RX     0.0    47.6    66.1    87.7   106.8   112.7   131.1   138.9
103          RY   204.0   202.0   200.0   198.0   198.0   200.0   202.0   204.0
             *

104          KK  SUB-13   BASIN
105          BA   0.541
106          LG    0.35    0.37    5.20    0.25       4
107          UC   0.246   0.133
108          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
109          UA     100
             *

110          KK     C13
111          KM   COMBINE R19C AND SUB-13
```

```
 112          HC       2
              *

 113          KK  SUB-18   BASIN
 114          BA   0.385
 115          LG    0.35    0.33    7.30    0.11      30
 116          UC   0.271   0.204
 117          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 118          UA     100
              *
```



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

 119          KK     C18
 120          KM   COMBINE C13 AND SUB-18
 121          HC       2
              *

 122          KK     R18   ROUTE   REACH
 123          RS       2    FLOW      -1
 124          RC   0.053   0.045   0.053    2572  0.0233  146.00
 125          RX     0.0     2.6     5.9     9.9    20.8    24.7    27.3    30.4
 126          RY   146.0   144.0   142.0   140.0   140.0   142.0   144.0   146.0
              *

 127          KK  SUB12A   BASIN
 128          BA   0.089
 129          LG    0.34    0.35    6.60    0.14      21
 130          UC   0.200   0.200
 131          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 132          UA     100
              *

 133          KK    C12A
 134          KM   COMBINE R18 AND SUB12A
 135          HC       2
              *

 136          KK  SUB33E   BASIN
 137          BA   0.194
 138          LG    0.34    0.33    6.80    0.13      26
 139          UC   0.221   0.163
 140          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 141          UA     100
              *

 142          KK  SUB33F   BASIN
 143          BA   0.021
 144          LG    0.31    0.20    6.80    0.12       4
 145          UC   0.158   0.178
 146          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 147          UA     100
              *

 148          KK    R33F   ROUTE   BASIN
 149          RS       1    FLOW      -1
 150          RC   0.053   0.045   0.053     477  0.0168  192.00
 151          RX     0.0    15.0    30.0    40.5    41.5    52.5    73.7   108.0
 152          RY   192.0   191.0   190.0   188.0   188.0   190.0   190.2   192.0
              *

 153          KK    C33F
 154          KM   COMBINE R33F AND SUB33E
 155          HC       2
              *
```



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

 156          KK  SUB33D   BASIN
 157          BA   0.035
 158          LG    0.33    0.32    5.70    0.20       5
 159          UC   0.350   0.518
 160          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 161          UA     100
              *

 162          KK    C33D
 163          KM   COMBINE C33F AND SUB33D
 164          HC       2
              *

 165          KK    R33D   ROUTE   REACH
 166          RS       3    FLOW      -1
 167          RC   0.053   0.045   0.053    1637  0.0104  188.00
 168          RX     0.0    49.3    60.6    71.9    83.0   133.7   175.9   214.2
 169          RY   188.0   186.0   184.0   182.0   182.0   184.0   186.0   188.0
              *
```

```
170          KK  SUB33B   BASIN
171          BA   0.155
172          LG    0.32    0.22    7.30    0.10       3
173          UC   0.225   0.193
174          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
175          UA     100
             *

176          KK    C33B
177          KM   COMBINE R33D AND SUB 33B
178          HC       2
             *

179          KK  SUB33C   BASIN
180          BA   0.028
181          LG    0.31    0.15   10.10    0.03       4
182          UC   0.196   0.223
183          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
184          UA     100
             *

185          KK    C33C
186          KM   COMBINE C33B AND SUB33C
187          HC       2
             *

188          KK    R33C   ROUTE   REACH
189          RS       1    FLOW      -1
190          RC   0.053   0.045   0.053    1320  0.0159  158.00
191          RX     0.0     6.5    14.3    25.5    44.2    52.6    58.3    64.3
192          RY   158.0   156.0   154.0   152.0   152.0   154.0   156.0   158.0
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

193          KK  SUB33A   BASIN
194          BA   0.055
195          LG    0.31    0.20    7.00    0.11       7
196          UC   0.150   0.106
197          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
198          UA     100
             *

199          KK    C33A
200          KM   COMBINE R33C AND SUB33A
201          HC       2
             *
             *

202          KK  SUB46A   BASIN
203          BA   0.032
204          LG    0.34    0.31    7.00    0.12       1
205          UC   0.179   0.217
206          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
207          UA     100
             *

208          KK  SUB46B   BASIN
209          BA   0.031
210          LG    0.34    0.33    7.00    0.12       1
211          UC   0.196   0.276
212          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
213          UA     100
             *

214          KK    R46B   ROUTE   BASIN
215          RS       1    FLOW      -1
216          RC   0.053   0.045   0.053     564  0.0390  262.00
217          RX     0.0     8.2    16.6    27.9    50.0    57.9    65.9    73.0
218          RY   262.0   260.0   258.0   256.0   256.0   258.0   260.0   262.0
             *

219          KK     C46
220          KM   COMBINE R46B AND SUB46A
221          HC       2
             *

222          KK  SUB-45   BASIN
223          BA   0.088
224          LG    0.34    0.24    9.70    0.05       1
225          UC   0.267   0.363
226          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
227          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  7

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

228          KK     C45
```

```
229          KM   COMBINE C46 AND SUB45
230          HC       2
             *

231          KK     R45   ROUTE   REACH
232          RS       9    FLOW      -1
233          RC   0.053   0.045   0.053    4898  0.0218  192.00
234          RX     0.0    26.3    64.2   107.1   146.4   157.7   166.9   176.3
235          RY   192.0   190.0   188.0   186.0   186.0   188.0   190.0   192.0
             *

236          KK  SUB-47   BASIN
237          BA   0.178
238          LG    0.32    0.29    5.40    0.21       3
239          UC   0.292   0.256
240          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
241          UA     100
             *

242          KK     C47
243          KM   COMBINE R45 AND SUB47
244          HC       2
             *
             *

245          KK  SUB-75   BASIN
246          BA   0.016
247          LG    0.35    0.40    6.00    0.18      13
248          UC   0.142   0.188
249          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
250          UA     100
             *

251          KK  SUB-76   BASIN
252          BA   0.020
253          LG    0.31    0.28    5.20    0.24       7
254          UC   0.146   0.171
255          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
256          UA     100
             *

257          KK     C76
258          KM   COMBINE SUB-75, AND SUB-76
259          HC       2
             *

260          KK     R76   ROUTE   REACH
261          RS       2    FLOW      -1
262          RC   0.053   0.045   0.053     919  0.0152  114.00
263          RX     0.0    44.9    63.2    67.9    71.3   107.2   136.4   159.2
264          RY   114.0   112.0   110.0   108.0   108.0   110.0   112.0   114.0
             *
```



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

265          KK  SUB-73   BASIN
266          BA   0.056
267          LG    0.34    0.36    6.60    0.15      24
268          UC   0.163   0.151
269          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
270          UA     100
             *

271          KK     C73
272          KM   COMBINE R76 AND SUB-73
273          HC       2
             *

274          KK  SUB-74   BASIN
275          BA   0.156
276          LG    0.32    0.28    6.80    0.14      31
277          UC   0.217   0.184
278          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
279          UA     100
             *

280          KK     C74
281          KM   COMBINE C73 AND SUB-74
282          HC       2
             *

283          KK     R74   ROUTE   REACH
284          RS       2    FLOW      -1
285          RC   0.053   0.045   0.053    1412  0.0212   92.00
286          RX     0.0    25.4    69.1    79.9    84.8    92.1    99.9   130.3
287          RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *

288          KK  SUB-71   BASIN
289          BA   0.035
```

```
290          LG    0.35    0.36    6.60    0.15      22
291          UC   0.150   0.149
292          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
293          UA     100
             *

294          KK     C71
295          KM   COMBINE R74 AND SUB-71
296          HC       2
             *

297          KK  SUB-70   BASIN
298          BA   0.072
299          LG    0.34    0.33    6.60    0.15      25
300          UC   0.213   0.261
301          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
302          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  9

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

303          KK     R70   ROUTE   BASIN
304          RS       1    FLOW      -1
305          RC   0.053   0.045   0.053     403  0.0546   92.00
306          RX     0.0    10.7    21.5    44.3    64.8    88.0   122.0   149.0
307          RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *

308          KK  SUB-72   BASIN
309          BA   0.155
310          LG    0.34    0.33    6.60    0.15      23
311          UC   0.217   0.188
312          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
313          UA     100
             *

314          KK     C70
315          KM   COMBINE R70 AND SUB-72
316          HC       2
             *

317          KK     C72
318          KM   COMBINE C70 AND C71
319          HC       2
             *

320          KK     R72   ROUTE   REACH
321          RS       4    FLOW      -1
322          RC   0.053   0.045   0.053    3492  0.0218    6.00
323          RX     0.0    21.3    57.8    75.7    77.8    85.0    92.5    99.9
324          RY     5.0     4.0     2.0     0.0     0.0     2.0     4.0     6.0
             *

325          KK  SUB-69   BASIN
326          BA   0.471
327          LG    0.32    0.31    6.00    0.19      23
328          UC   0.275   0.198
329          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
330          UA     100
             *

331          KK     C69
332          KM   COMBINE R72 AND SUB-69
333          HC       2
             *

334          KK  SUB-57   BASIN
335          BA   0.066
336          LG    0.33    0.33    5.80    0.19      15
337          UC   0.158   0.121
338          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
339          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

340          KK     C57
341          KM   COMBINE SUB-57 AND C69
342          HC       2
             *

343          KK     R69   ROUTE   REACH
344          RS       3    FLOW      -1
345          RC   0.053   0.045   0.053    2610  0.0146   972.00
346          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
347          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *
```

```
348          KK  SUB-58   BASIN
349          BA   0.111
350          LG    0.33    0.33    5.30    0.23       3
351          UC   0.196   0.163
352          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
353          UA     100
             *

354          KK     R58   ROUTE   BASIN
355          RS       1    FLOW      -1
356          RC   0.053   0.045   0.053     455  0.0132  972.00
357          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
358          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *

359          KK  SUB-59   BASIN
360          BA   0.082
361          LG    0.31    0.27    5.00    0.30      10
362          UC   0.400   0.605
363          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
364          UA     100
             *

365          KK  SUB-60   BASIN
366          BA   0.092
367          LG    0.32    0.23    7.00    0.13       9
368          UC   0.338   0.432
369          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
370          UA     100
             *

371          KK     C60
372          KM   COMBINE R69, R58, SUB-59, SUB-60
373          HC       4
             *

374          KK     R60   ROUTE   REACH
375          RS       1    FLOW      -1
376          RC   0.053   0.045   0.053     420  0.0143  960.00
377          RX     0.0    42.8    63.6    82.6   106.8   117.5   120.1   182.8
378          RY   964.0   962.0   960.0   958.0   958.0   960.0   960.0   960.0
             *
```



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

379          KK  SUB-61   BASIN
380          BA   0.142
381          LG    0.31    0.17    7.60    0.10      11
382          UC   0.396   0.527
383          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
384          UA     100
             *

385          KK     C61
386          KM   COMBINE R60, AND SUB-61
387          HC       2
             *

388          KK     R61   ROUTE   REACH
389          RS       1    FLOW      -1
390          RC   0.053   0.045   0.053     780  0.0103  950.00
391          RX     0.0     7.4    14.6    36.2    47.1    62.9    69.6    76.4
392          RY   950.0   948.0   946.0   946.0   946.0   946.0   948.0   950.0
             *

393          KK  SUB-62   BASIN
394          BA   0.098
395          LG    0.32    0.22    7.60    0.10       4
396          UC   0.304   0.332
397          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
398          UA     100
             *

399          KK  SUB-63   BASIN
400          BA   0.082
401          LG    0.31    0.18    8.00    0.08       5
402          UC   0.292   0.351
403          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
404          UA     100
             *

405          KK     C63
406          KM   COMBINE R61, SUB-62, AND SUB-63
407          HC       3
             *

408          KK     R63   ROUTE   REACH
409          RS       2    FLOW      -1
410          RC   0.053   0.045   0.053    2145  0.0196  922.00
411          RX     0.0     4.2     8.2    12.2    36.3    41.2    45.8    50.4
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412          RY   922.0   920.0   918.0   916.0   916.0   918.0   920.0   922.0
             *

413          KK  SUB-64   BASIN
414          BA   0.071
415          LG    0.31    0.18    7.30    0.10       4
416          UC   0.292   0.360
417          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
418          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 12

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

419          KK     C64
420          KM   COMBINE R63, AND SUB-64
421          HC       2
             *
422          ZZ
1
     SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE   (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
  NO.   (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW
   49   SUB14B
        .
   55   .      SUB14C
        .          .
        .          .
   61   C14C............
        V
        V
   64   R14C
        .
        .
   69   .      SUB14A
        .          .
        .          .
   75   C14A............
        .
        .
   78   .      SUB19A
        .          .
        .          .
   84   .          .      SUB19B
        .          .          .
        .          .          .
   90   .          .          .      SUB19C
        .          .          .          .
        .          .          .          .
   96   C19C.....................................
        V
        V
   99   R19C
        .
        .
  104   .      SUB-13
        .          .
        .          .
  110   C13............
        .
        .
  113   .      SUB-18
        .          .
        .          .
  119   C18............
        V
        V
  122   R18
        .
        .
  127   .      SUB12A
        .          .
        .          .
  133   C12A............
        .
        .
  136   .      SUB33E
        .          .
        .          .
  142   .          .      SUB33F
        .          .          V
        .          .          V
  148   .          .        R33F
        .          .          .
        .          .          .
  153   .        C33F............
        .          .
```

```
156                 SUB33D
                      .
162          C33D............
                V
                V
165          R33D
                .
170                 SUB33B
                      .
176          C33B............
                .
179                 SUB33C
                      .
185          C33C............
                V
                V
188          R33C
                .
193                 SUB33A
                      .
199          C33A............
                .
202                 SUB46A
                      .
208                      .        SUB46B
                         .           V
                         .           V
214                      .         R46B
                         .           .
219                   C46............
                         .
222                      .        SUB-45
                         .           .
228                   C45............
                         V
                         V
231                   R45
                         .
236                      .        SUB-47
                         .           .
242                   C47............
                         .
245                      .        SUB-75
                         .           .
251                      .           .        SUB-76
                         .           .           .
257                      .         C76............
                         .           V
                         .           V
260                      .         R76
                         .           .
265                      .           .        SUB-73
                         .           .           .
271                      .         C73............
                         .           .
274                      .           .        SUB-74
                         .           .           .
280                      .         C74............
                         .           V
                         .           V
283                      .         R74
                         .           .
288                      .           .        SUB-71
                         .           .           .
294                      .         C71............
                         .           .
297                      .           .        SUB-70
```

```
                 .         .         .         .         V
                 .         .         .         .         V
     303         .         .         .         .       R70
                 .         .         .         .         .
     308         .         .         .         .         .      SUB-72
                 .         .         .         .         .         .
     314         .         .         .         .       C70............
                 .         .         .         .         .
     317         .         .         .       C72.........
                 .         .         .         V
     320         .         .         .         V
                 .         .         .       R72
                 .         .         .         .
     325         .         .         .         .     SUB-69
                 .         .         .         .         .
     331         .         .         .       C69.........
                 .         .         .         .
     334         .         .         .         .     SUB-57
                 .         .         .         .         .
     340         .         .         .       C57.........
                 .         .         .         V
     343         .         .         .         V
                 .         .         .       R69
                 .         .         .         .
     348         .         .         .         .     SUB-58
                 .         .         .         .         V
     354         .         .         .         .         V
                 .         .         .         .       R58
                 .         .         .         .         .
     359         .         .         .         .         .      SUB-59
                 .         .         .         .         .         .
     365         .         .         .         .         .         .      SUB-60
                 .         .         .         .         .         .         .
     371         .         .         .       C60...............................
                 .         .         .         V
     374         .         .         .         V
                 .         .         .       R60
                 .         .         .         .
     379         .         .         .         .     SUB-61
                 .         .         .         .         .
     385         .         .         .       C61.........
                 .         .         .         V
     388         .         .         .         V
                 .         .         .       R61
                 .         .         .         .
     393         .         .         .         .     SUB-62
                 .         .         .         .         .
     399         .         .         .         .         .      SUB-63
                 .         .         .         .         .         .
     405         .         .         .       C63....................
                 .         .         .         V
     408         .         .         .         V
                 .         .         .       R63
                 .         .         .         .
     413         .         .         .         .     SUB-64
                 .         .         .         .         .
     419         .         .         .       C64.........
```

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB14B	543.	4.20	54.	14.	5.	.27		
+	HYDROGRAPH AT	SUB14C	1118.	4.17	97.	24.	9.	.46		

+ 2 COMBINED AT	C14C	1509.	4.17	148.	37.	13.	.73
+ ROUTED TO	R14C	1451.	4.27	148.	37.	13.	.73
+ HYDROGRAPH AT	SUB14A	482.	4.13	40.	10.	4.	.18
+ 2 COMBINED AT	C14A	1691.	4.23	185.	46.	17.	.91
+ HYDROGRAPH AT	SUB19A	294.	4.10	27.	7.	2.	.11
+ HYDROGRAPH AT	SUB19B	650.	4.13	64.	16.	6.	.26
+ HYDROGRAPH AT	SUB19C	283.	4.10	27.	7.	2.	.10
+ 4 COMBINED AT	C19C	2344.	4.17	292.	73.	26.	1.38
+ ROUTED TO	R19C	2274.	4.30	292.	73.	26.	1.38
+ HYDROGRAPH AT	SUB-13	1431.	4.13	99.	25.	9.	.54
+ 2 COMBINED AT	C13	2664.	4.23	372.	93.	34.	1.92
+ HYDROGRAPH AT	SUB-18	999.	4.17	97.	24.	9.	.38
+ 2 COMBINED AT	C18	3129.	4.20	458.	115.	41.	2.30
+ ROUTED TO	R18	3117.	4.27	458.	115.	41.	2.30
+ HYDROGRAPH AT	SUB12A	233.	4.10	21.	5.	2.	.09
+ 2 COMBINED AT	C12A	3198.	4.27	476.	120.	43.	2.39
+ HYDROGRAPH AT	SUB33E	548.	4.10	47.	12.	4.	.19
+ HYDROGRAPH AT	SUB33F	60.	4.07	5.	1.	0.	.02
+ ROUTED TO	R33F	59.	4.10	5.	1.	0.	.02
+ 2 COMBINED AT	C33F	606.	4.10	52.	13.	5.	.22
+ HYDROGRAPH AT	SUB33D	50.	4.23	7.	2.	1.	.04
+ 2 COMBINED AT	C33D	643.	4.10	59.	15.	5.	.25
+ ROUTED TO	R33D	625.	4.17	59.	15.	5.	.25
+ HYDROGRAPH AT	SUB33B	417.	4.13	36.	9.	3.	.16
+ 2 COMBINED AT	C33B	1017.	4.13	94.	24.	9.	.41
+ HYDROGRAPH AT	SUB33C	77.	4.10	8.	2.	1.	.03
+ 2 COMBINED AT	C33C	1092.	4.13	102.	26.	9.	.43
+ ROUTED TO	R33C	1073.	4.17	102.	26.	9.	.43
+ HYDROGRAPH AT	SUB33A	182.	4.07	13.	3.	1.	.05
+ 2 COMBINED AT	C33A	1182.	4.17	115.	29.	10.	.49
+ HYDROGRAPH AT	SUB46A	81.	4.10	7.	2.	1.	.03

+	HYDROGRAPH AT	SUB46B	69.	4.10	6.	2.	1.	.03
+	ROUTED TO	R46B	68.	4.13	6.	2.	1.	.03
+	2 COMBINED AT	C46	146.	4.10	13.	3.	1.	.06
+	HYDROGRAPH AT	SUB-45	180.	4.17	21.	5.	2.	.09
+	2 COMBINED AT	C45	320.	4.13	34.	9.	3.	.15
+	ROUTED TO	R45	296.	4.37	34.	9.	3.	.15
+	HYDROGRAPH AT	SUB-47	388.	4.17	36.	9.	3.	.18
+	2 COMBINED AT	C47	579.	4.27	70.	17.	6.	.33
+	HYDROGRAPH AT	SUB-75	42.	4.07	3.	1.	0.	.02
+	HYDROGRAPH AT	SUB-76	55.	4.07	4.	1.	0.	.02
+	2 COMBINED AT	C76	97.	4.07	7.	2.	1.	.04
+	ROUTED TO	R76	92.	4.10	7.	2.	1.	.04
+	HYDROGRAPH AT	SUB-73	163.	4.07	13.	3.	1.	.06
+	2 COMBINED AT	C73	253.	4.10	21.	5.	2.	.09
+	HYDROGRAPH AT	SUB-74	428.	4.10	40.	10.	4.	.16
+	2 COMBINED AT	C74	680.	4.10	60.	15.	5.	.25
+	ROUTED TO	R74	661.	4.13	60.	15.	5.	.25
+	HYDROGRAPH AT	SUB-71	103.	4.07	8.	2.	1.	.04
+	2 COMBINED AT	C71	747.	4.13	68.	17.	6.	.28
+	HYDROGRAPH AT	SUB-70	168.	4.13	17.	4.	2.	.07
+	ROUTED TO	R70	168.	4.13	17.	4.	2.	.07
+	HYDROGRAPH AT	SUB-72	411.	4.10	36.	9.	3.	.16
+	2 COMBINED AT	C70	577.	4.13	54.	13.	5.	.23
+	2 COMBINED AT	C72	1315.	4.13	121.	30.	11.	.51
+	ROUTED TO	R72	1250.	4.23	121.	30.	11.	.51
+	HYDROGRAPH AT	SUB-69	1190.	4.17	109.	27.	10.	.47
+	2 COMBINED AT	C69	2008.	4.17	222.	56.	20.	.98
+	HYDROGRAPH AT	SUB-57	202.	4.07	14.	4.	1.	.07
+	2 COMBINED AT	C57	2085.	4.17	235.	59.	21.	1.05
+	ROUTED TO	R69	2035.	4.23	234.	59.	21.	1.05
	HYDROGRAPH AT							

+		SUB-58	296.	4.10	21.	5.	2.	.11
	ROUTED TO	R58	290.	4.10	21.	5.	2.	.11
+	HYDROGRAPH AT	SUB-59	103.	4.27	16.	4.	1.	.08
+	HYDROGRAPH AT	SUB-60	160.	4.23	21.	5.	2.	.09
+	4 COMBINED AT	C60	2272.	4.23	285.	72.	26.	1.33
+	ROUTED TO	R60	2258.	4.27	285.	72.	26.	1.33
+	HYDROGRAPH AT	SUB-61	226.	4.27	35.	9.	3.	.14
+	2 COMBINED AT	C61	2376.	4.27	317.	80.	29.	1.47
+	ROUTED TO	R61	2370.	4.27	317.	80.	29.	1.47
+	HYDROGRAPH AT	SUB-62	202.	4.20	23.	6.	2.	.10
+	HYDROGRAPH AT	SUB-63	169.	4.17	20.	5.	2.	.08
+	3 COMBINED AT	C63	2557.	4.27	355.	89.	32.	1.65
+	ROUTED TO	R63	2544.	4.30	355.	89.	32.	1.65
+	HYDROGRAPH AT	SUB-64	143.	4.20	17.	4.	2.	.07
+	2 COMBINED AT	C64	2611.	4.30	370.	93.	33.	1.72

NORMAL END OF HEC-1 ***

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            JUN  1998                 *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   25JUL07  TIME  08:46:57  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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


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

   1          ID   Project ID: 40933-E24HR - Major Basin: 01 - Return Period: 100 Years
   2          ID
   3          ID
   4          ID   CAVECREEK DRAINAGE MASTER PLAN
   5          ID   FLOODPLAIN DELINEATION STUDY OF CAVECREEK TRIBUTARIES, WILLOW SPRINGS WASH
   6          ID   TRIBUTARIES, GALLOWAY TRIBUTARIES, AND MORMAN GIRL WASH TRIBUTARIES.
   7          ID   FCD CONTRACT #2004C072
   8          ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   9          ID   PREPARED BY HDR ENGINEERING-July 2007
  10          ID   FILE NAME: E100-24.DAT
  11          ID
  12          ID   ******************************************************************************
  13          ID   100-YEAR, 24-HOUR STORM EVENT
  14          ID   MULTIPLE STORM EVENT
  15          ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
  16          ID   EXISTING LAND USE FROM AERIAL PHOTOGRAPHY
  17          ID   ******************************************************************************
  18          ID
  19          ID
  20          ID
  21          ID
              *DIAGRAM
  22          IT       2                    2000
  23          IO       3
  24          IN      15
  25          JD    4.60    0.01
  26          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
  27          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
  28          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
  29          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
  30          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  31          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  32          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  33          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
  34          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
  35          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
  36          JD   4.324      10
  37          JD   4.140      30
  38          JD   3.956      60
  39          JD   3.892      90
  40          JD   3.836     120
  41          JD   3.795     150
  42          JD   3.680     300
  43          JD   3.588     500

  44          KK  SUB14B   BASIN
  45          BA   0.267
              *
  46          LG    0.35    0.35    7.00    0.12       0
  47          UC   0.313   0.300
  48          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  49          UA     100
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  50          KK  SUB14C   BASIN
  51          BA   0.458
  52          LG    0.35    0.32    7.60    0.10       1
  53          UC   0.279   0.218
  54          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  55          UA     100
              *

  56          KK    C14C
  57          KM   COMBINE SUB-14B, AND SUB-14C
  58          HC       2
              *

  59          KK    R14C   ROUTE   REACH
  60          RS       4    FLOW      -1
  61          RC   0.053   0.045   0.053    3270  0.0130  246.00
  62          RX     0.0     4.8     9.6    14.5    39.4    78.3    94.4   110.1
  63          RY   246.0   244.0   242.0   240.0   240.0   242.0   244.0   246.0
              *

  64          KK  SUB14A   BASIN
  65          BA   0.180
  66          LG    0.35    0.30    8.00    0.08       3
  67          UC   0.233   0.191
  68          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  69          UA     100
              *

  70          KK    C14A
  71          KM   COMBINE R14C AND SUB-14A
  72          HC       2
              *

  73          KK  SUB19A   BASIN
  74          BA   0.111
  75          LG    0.35    0.32    7.60    0.10      19
  76          UC   0.208   0.201
  77          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  78          UA     100
              *

  79          KK  SUB19B   BASIN
  80          BA   0.257
  81          LG    0.35    0.35    7.00    0.12      29
  82          UC   0.250   0.220
  83          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  84          UA     100
              *
1                                        HEC-1 INPUT                                        PAGE  3

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

  85          KK  SUB19C   BASIN
  86          BA   0.105
  87          LG    0.35    0.33    7.30    0.11      30
  88          UC   0.204   0.199
  89          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  90          UA     100
              *

  91          KK    C19C
  92          KM   COMBINE C14A, SUB-19A, SUB-19B, AND SUB-19C
  93          HC       4
              *

  94          KK    R19C   ROUTE   REACH
  95          RS       5    FLOW      -1
  96          RC   0.053   0.045   0.053    4116  0.0114  204.00
  97          RX     0.0    47.6    66.1    87.7   106.8   112.7   131.1   138.9
  98          RY   204.0   202.0   200.0   198.0   198.0   200.0   202.0   204.0
              *

  99          KK  SUB-13   BASIN
 100          BA   0.541
 101          LG    0.35    0.37    5.20    0.25       4
 102          UC   0.246   0.133
 103          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 104          UA     100
              *

 105          KK     C13
 106          KM   COMBINE R19C AND SUB-13
 107          HC       2
              *

 108          KK  SUB-18   BASIN
 109          BA   0.385
```

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110          LG    0.35    0.33    7.30    0.11      30
111          UC   0.271   0.204
112          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
113          UA     100
             *

114          KK     C18
115          KM   COMBINE C13 AND SUB-18
116          HC       2
             *

117          KK     R18   ROUTE   REACH
118          RS       1    FLOW      -1
119          RC   0.053   0.045   0.053    2572  0.0233  146.00
120          RX     0.0     2.6     5.9     9.9    20.8    24.7    27.3    30.4
121          RY   146.0   144.0   142.0   140.0   140.0   142.0   144.0   146.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

122          KK  SUB12A   BASIN
123          BA   0.089
124          LG    0.34    0.35    6.60    0.14      21
125          UC   0.200   0.200
126          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
127          UA     100
             *

128          KK    C12A
129          KM   COMBINE R18 AND SUB12A
130          HC       2
             *

131          KK  SUB33E   BASIN
132          BA   0.194
133          LG    0.34    0.33    6.80    0.13      26
134          UC   0.221   0.163
135          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
136          UA     100
             *

137          KK  SUB33F   BASIN
138          BA   0.021
139          LG    0.31    0.20    6.80    0.12       4
140          UC   0.158   0.178
141          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
142          UA     100
             *

143          KK    R33F   ROUTE   BASIN
144          RS       1    FLOW      -1
145          RC   0.053   0.045   0.053     477  0.0168  192.00
146          RX     0.0    15.0    30.0    40.5    41.5    52.5    73.7   108.0
147          RY   192.0   191.0   190.0   188.0   188.0   190.0   190.2   192.0
             *

148          KK    C33F
149          KM   COMBINE R33F AND SUB33E
150          HC       2
             *

151          KK  SUB33D   BASIN
152          BA   0.035
153          LG    0.33    0.32    5.70    0.20       5
154          UC   0.350   0.518
155          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
156          UA     100
             *
```



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

157          KK    C33D
158          KM   COMBINE C33F AND SUB33D
159          HC       2
             *

160          KK    R33D   ROUTE   REACH
161          RS       4    FLOW      -1
162          RC   0.053   0.045   0.053    1637  0.0104  188.00
163          RX     0.0    49.3    60.6    71.9    83.0   133.7   175.9   214.2
164          RY   188.0   186.0   184.0   182.0   182.0   184.0   186.0   188.0
             *

165          KK  SUB33B   BASIN
166          BA   0.155
167          LG    0.32    0.22    7.30    0.10       3
168          UC   0.225   0.193
169          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
```

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170          UA     100
             *

171          KK    C33B
172          KM   COMBINE R33D AND SUB33B
173          HC       2
             *

174          KK  SUB33C   BASIN
175          BA   0.028
176          LG    0.31    0.15   10.10    0.03       4
177          UC   0.196   0.223
178          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
179          UA     100
             *

180          KK    C33C
181          KM   COMBINE C33B AND SUB33C
182          HC       2
             *

183          KK    R33C   ROUTE   REACH
184          RS       2    FLOW      -1
185          RC   0.053   0.045   0.053    1320  0.0159  158.00
186          RX     0.0     6.5    14.3    25.5    44.2    52.6    58.3    64.3
187          RY   158.0   156.0   154.0   152.0   152.0   154.0   156.0   158.0
             *

188          KK  SUB33A   BASIN
189          BA   0.055
190          LG    0.31    0.20    7.00    0.11       7
191          UC   0.150   0.106
192          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
193          UA     100
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

194          KK    C33A
195          KM   COMBINE R33C AND SUB33A
196          HC       2
             *
             *

197          KK  SUB46A   BASIN
198          BA   0.032
199          LG    0.34    0.31    7.00    0.12       1
200          UC   0.179   0.217
201          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
202          UA     100
             *

203          KK  SUB46B   BASIN
204          BA   0.031
205          LG    0.34    0.33    7.00    0.12       1
206          UC   0.196   0.276
207          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
208          UA     100
             *

209          KK    R46B   ROUTE   BASIN
210          RS       1    FLOW      -1
211          RC   0.053   0.045   0.053     564  0.0390  262.00
212          RX     0.0     8.2    16.6    27.9    50.0    57.9    65.9    73.0
213          RY   262.0   260.0   258.0   256.0   256.0   258.0   260.0   262.0
             *

214          KK     C46
215          KM   COMBINE R46B AND SUB46A
216          HC       2
             *

217          KK  SUB-45   BASIN
218          BA   0.088
219          LG    0.34    0.24    9.70    0.05       1
220          UC   0.267   0.363
221          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
222          UA     100
             *

223          KK     C45
224          KM   COMBINE C46 AND SUB-45
225          HC       2
             *

226          KK     R45   ROUTE   REACH
227          RS      10    FLOW      -1
228          RC   0.053   0.045   0.053    4898  0.0218  192.00
229          RX     0.0    26.3    64.2   107.1   146.4   157.7   166.9   176.3
230          RY   192.0   190.0   188.0   186.0   186.0   188.0   190.0   192.0
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                *
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 231            KK  SUB-47   BASIN
 232            BA   0.178
 233            LG    0.32    0.29    5.40    0.21       3
 234            UC   0.292   0.256
 235            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 236            UA     100
                *

 237            KK     C47
 238            KM   COMBINE R45 AND SUB47
 239            HC       2
                *
                *

 240            KK  SUB-75   BASIN
 241            BA   0.016
 242            LG    0.35    0.40    6.00    0.18      13
 243            UC   0.142   0.188
 244            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 245            UA     100
                *

 246            KK  SUB-76   BASIN
 247            BA   0.020
 248            LG    0.31    0.28    5.20    0.24       7
 249            UC   0.146   0.171
 250            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 251            UA     100
                *

 252            KK     C76
 253            KM   COMBINE SUB-75, AND SUB-76
 254            HC       2
                *

 255            KK     R76   ROUTE   REACH
 256            RS       3    FLOW      -1
 257            RC   0.053   0.045   0.053     919  0.0152  114.00
 258            RX     0.0    44.9    63.2    67.9    71.3   107.2   136.4   159.2
 259            RY   114.0   112.0   110.0   108.0   108.0   110.0   112.0   114.0
                *

 260            KK  SUB-73   BASIN
 261            BA   0.056
 262            LG    0.34    0.36    6.60    0.15      24
 263            UC   0.163   0.151
 264            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 265            UA     100
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 266            KK     C73
 267            KM   COMBINE R76 AND SUB-73
 268            HC       2
                *

 269            KK  SUB-74   BASIN
 270            BA   0.156
 271            LG    0.32    0.28    6.80    0.14      31
 272            UC   0.217   0.184
 273            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 274            UA     100
                *

 275            KK     C74
 276            KM   COMBINE C73 AND SUB-74
 277            HC       2
                *

 278            KK     R74   ROUTE   REACH
 279            RS       2    FLOW      -1
 280            RC   0.053   0.045   0.053    1412  0.0212   92.00
 281            RX     0.0    25.4    69.1    79.9    84.8    92.1    99.9   130.3
 282            RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
                *

 283            KK  SUB-71   BASIN
 284            BA   0.035
 285            LG    0.35    0.36    6.60    0.15      22
 286            UC   0.150   0.149
 287            UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 288            UA     100
                *
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289          KK     C71
290          KM   COMBINE R74 AND SUB-71
291          HC       2
             *

292          KK  SUB-70   BASIN
293          BA   0.072
294          LG    0.34    0.33    6.60    0.15      25
295          UC   0.213   0.261
296          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
297          UA     100
             *

298          KK     R70   ROUTE   BASIN
299          RS       1    FLOW      -1
300          RC   0.053   0.045   0.053     403  0.0546   92.00
301          RX     0.0    10.7    21.5    44.3    64.8    88.0   122.0   149.0
302          RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *
1                                        HEC-1 INPUT                                                    PAGE  9

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

303          KK  SUB-72   BASIN
304          BA   0.155
305          LG    0.34    0.33    6.60    0.15      23
306          UC   0.217   0.188
307          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
308          UA     100
             *

309          KK     C70
310          KM   COMBINE R70 AND SUB-72
311          HC       2
             *

312          KK     C72
313          KM   COMBINE C70 AND C71
314          HC       2
             *

315          KK     R72   ROUTE   REACH
316          RS       4    FLOW      -1
317          RC   0.053   0.045   0.053    3492  0.0218    6.00
318          RX     0.0    21.3    57.8    75.7    77.8    85.0    92.5    99.9
319          RY     5.0     4.0     2.0     0.0     0.0     2.0     4.0     6.0
             *

320          KK  SUB-69   BASIN
321          BA   0.471
322          LG    0.32    0.31    6.00    0.19      23
323          UC   0.275   0.198
324          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
325          UA     100
             *
326          IN       6
             *

327          KK  HYDRO6
328          BA   0.001
329          QI       0       0       0       0       0       0       0       0       0       0
330          QI       0       0       0       0       0       0       0       0       0       0
331          QI       0       0       0       0       0       0       0       0       0       0
332          QI       0       0       0       0       0       0       0       0       0       0
333          QI       0       0       0       0       0       0       0       0       0       0
334          QI       0       0       0       0       0       0       0       0       0       0
335          QI       0       0       0       0       0       0       0       0       0       0
336          QI       0       0       0       0       0       0       0       0       0       0
337          QI       0       0       0       0       0       0       0       0       0       0
338          QI       0       0       0       0    0.59    2.27    2.61    2.85    2.95     3.1
339          QI    3.29    3.52    3.71    3.83    4.02    4.18    4.39    4.72    5.19     5.7
340          QI    6.56   10.56    20.2   25.52   30.32   33.97   41.23   69.55  206.95  363.49
341          QI  608.08   767.6  995.12 1056.41 1235.54 1198.32 1078.59  945.57  854.97   782.6
342          QI  718.04     626  525.97  440.05  378.58  326.95  282.22  247.17  216.01  191.48
343          QI  170.93  153.54  139.24  126.93   116.2  107.13   98.18   91.55   85.28   79.28
344          QI   73.58   67.19   63.42   60.18   57.37   54.61   52.49   49.38    46.2    42.9
345          QI   40.71   38.54   37.29   34.88   33.38   32.08   30.76   29.61    28.8    27.6
1                                        HEC-1 INPUT                                                    PAGE 10

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

346          QI   26.45   25.96   25.16   24.41   24.09   23.51    22.7   22.33   22.02   21.29
347          QI   20.86   20.15    19.6   19.19   18.52   18.22   17.76   17.28   16.92   16.81
348          QI   16.34      16   15.86   15.66   15.57   15.26   14.94   14.65   14.44   14.21
349          QI   14.08    13.7   13.42   13.02   12.69   12.44   12.24   12.11      12   11.91
350          QI   11.67   11.61   11.38   11.28   11.04   10.94   10.72   10.44   10.16    9.79
351          QI    9.67    9.43    9.27    9.04    8.84    8.76    8.62    8.52    8.44    8.37
352          QI    8.32    8.24    8.18    8.13    8.08       8    7.99       8       8    7.99
353          QI     0.1
             *
```

```
354          KK     C69
355          KM   COMBINE R72, SUB-69, AND HYDRO6
356          HC       3
             *

357          KK  SUB-57   BASIN
358          BA   0.066
359          LG    0.33    0.33    5.80    0.19      15
360          UC   0.158   0.121
361          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
362          UA     100
             *

363          KK     C57
364          KM   COMBINE SUB-57 AND C69
365          HC       2
             *

366          KK     R69   ROUTE   REACH
367          RS       3    FLOW      -1
368          RC   0.053   0.045   0.053    2610  0.0146  972.00
369          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
370          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *

371          KK  SUB-58   BASIN
372          BA   0.111
373          LG    0.33    0.33    5.30    0.23       3
374          UC   0.196   0.163
375          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
376          UA     100
             *

377          KK     R58   ROUTE   BASIN
378          RS       1    FLOW      -1
379          RC   0.053   0.045   0.053     455  0.0132  972.00
380          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
381          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *
```



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

382          KK  SUB-59   BASIN
383          BA   0.082
384          LG    0.31    0.27    5.00    0.30      10
385          UC   0.400   0.605
386          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
387          UA     100
             *

388          KK  SUB-60   BASIN
389          BA   0.092
390          LG    0.32    0.23    7.00    0.13       9
391          UC   0.338   0.432
392          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
393          UA     100
             *

394          KK     C60
395          KM   COMBINE R69, R58, SUB-59, SUB-60
396          HC       4
             *

397          KK     R60   ROUTE   REACH
398          RS       1    FLOW      -1
399          RC   0.053   0.045   0.053     420  0.0143  960.00
400          RX     0.0    42.8    63.6    82.6   106.8   117.5   120.1   182.8
401          RY   964.0   962.0   960.0   958.0   958.0   960.0   960.0   960.0
             *

402          KK  SUB-61   BASIN
403          BA   0.142
404          LG    0.31    0.17    7.60    0.10      11
405          UC   0.396   0.527
406          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
407          UA     100
             *

408          KK     C61
409          KM   COMBINE R60, AND SUB-61
410          HC       2
             *

411          KK     R61   ROUTE   REACH
412          RS       1    FLOW      -1
413          RC   0.053   0.045   0.053     780  0.0103  950.00
414          RX     0.0     7.4    14.6    36.2    47.1    62.9    69.6    76.4
415          RY   950.0   948.0   946.0   946.0   946.0   946.0   948.0   950.0
             *
```

```
416          KK  SUB-62   BASIN
417          BA   0.098
418          LG    0.32    0.22    7.60    0.10       4
419          UC   0.304   0.332
420          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
421          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 12

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

422          KK  SUB-63   BASIN
423          BA   0.082
424          LG    0.31    0.18    8.00    0.08       5
425          UC   0.292   0.351
426          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
427          UA     100
             *

428          KK  HYDRO2
429          BA   0.001
430          QI       0       0       0       0       0       0       0       0       0       0
431          QI       0       0       0       0       0       0       0       0       0       0
432          QI       0       0       0       0       0       0       0       0       0       0
433          QI       0       0       0       0       0       0       0       0       0       0
434          QI       0       0       0       0       0       0       0       0       0       0
435          QI       0       0       0       0       0       0       0       0       0       0
436          QI       0       0       0       0       0       0       0       0       0       0
437          QI       0       0       0       0       0       0       0       0       0       0
438          QI       0       0       0       0       0       0       0       0       0       0
439          QI       0       0       0       0       0       0       0       0       0       0
440          QI       0       0       0       0       0       0       0       0       0       0
441          QI       0       0       0       0       0       0       0    0.06    0.21    4.92
442          QI   15.82   42.09    68.3   70.34   82.67  198.46  208.82  193.16  164.98  143.11
443          QI  117.68  107.17   99.98   91.35   87.97   83.27   80.93   76.24   74.23   70.99
444          QI   67.18   63.35   60.23    55.6   37.08    34.4   30.86   27.52   25.07   23.88
445          QI   21.83   19.98   18.41   16.76   15.18   13.65   12.63   11.77   10.72    9.53
446          QI    8.73    8.01    7.35     6.7    6.45    5.83    5.52    5.36     5.1    4.86
447          QI    4.44    4.07     3.9    3.73    3.42    3.17    3.03    2.93    2.79     2.6
448          QI    2.38    2.18    2.12    1.66    1.33    1.44    1.23    1.45     1.4    1.28
449          QI    1.15    1.12    1.02    0.94    0.89    0.82    0.76    0.71    0.67    0.62
450          QI    0.58    0.55    0.55    0.53    0.49    0.48    0.47    0.39    0.37    0.42
451          QI    0.39    0.34    0.33    0.32    0.31     0.3    0.29    0.29    0.28    0.28
452          QI    0.27    0.26    0.25    0.23    0.23    0.22    0.21     0.2    0.19    0.19
453          QI    0.18    0.17    0.16    0.15    0.15    0.14    0.13    0.13    0.12    0.04
454          QI    0.01
             *

455          KK  HYDRO3
456          BA   0.001
457          QI       0       0       0       0       0       0       0       0       0       0
458          QI       0       0       0       0       0       0       0       0       0       0
459          QI       0       0       0       0       0       0       0       0       0       0
460          QI       0       0       0       0       0       0       0       0       0       0
461          QI       0       0       0       0       0       0       0       0       0       0
462          QI       0       0       0       0       0       0       0       0       0       0
463          QI       0       0       0       0       0       0       0       0       0       0
464          QI       0       0       0       0       0       0       0       0       0       0
465          QI       0       0       0       0       0       0       0       0       0       0
466          QI       0       0       0       0       0       0       0       0       0       0
467          QI       0       0       0       0       0       0       0       0       0       0
468          QI       0       0       0       0       0       0       0       0    1.96    6.05
469          QI    8.11    2.58    3.37   15.16  223.84  553.48  557.89  484.36  405.52  337.86
470          QI  289.58  244.22  200.76  162.35  123.39   96.28   70.95   48.75   36.47   26.05
471          QI   18.93   13.62     9.5    6.39    3.99    2.65     1.3    0.78    0.57    0.37
1                                          HEC-1 INPUT                                          PAGE 13

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

472          QI     0.3    0.23    0.17    0.12    0.08    0.05    0.02       0       0       0
473          QI       0       0       0       0       0       0       0       0       0       0
474          QI       0       0       0       0       0       0       0       0       0       0
475          QI       0       0       0       0       0       0       0       0       0       0
476          QI       0       0       0       0       0       0       0       0       0       0
477          QI       0       0       0       0       0       0       0       0       0       0
478          QI       0       0       0       0       0       0       0       0       0       0
479          QI       0       0       0       0       0       0       0       0       0       0
480          QI       0       0       0       0       0       0       0       0       0       0
481          QI       0
             *

482          KK     C63
483          KM   COMBINE R61, SUB-62, SUB-63, HYDRO2, AND HYDRO3
484          HC       5
             *

485          KK     R63   ROUTE   REACH
486          RS       2    FLOW      -1
487          RC   0.053   0.045   0.053    2145  0.0196  922.00
488          RX     0.0     4.2     8.2    12.2    36.3    41.2    45.8    50.4
```

```
489          RY   922.0   920.0   918.0   916.0   916.0   918.0   920.0   922.0
             *

490          KK  SUB-64   BASIN
491          BA   0.071
492          LG    0.31    0.18    7.30    0.10       4
493          UC   0.292   0.360
494          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
495          UA     100
             *

496          KK     C64
497          KM   COMBINE R63, AND SUB-64
498          HC       2
             *
499          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   44     SUB14B
               .
               .
   50          .      SUB14C
               .           .
               .           .
   56       C14C............
               V
               V
   59       R14C
               .
               .
   64          .      SUB14A
               .           .
               .           .
   70       C14A............
               .
               .
   73          .      SUB19A
               .           .
               .           .
   79          .           .      SUB19B
               .           .           .
               .           .           .
   85          .           .           .      SUB19C
               .           .           .           .
               .           .           .           .
   91       C19C.................................
               V
               V
   94       R19C
               .
               .
   99          .      SUB-13
               .           .
               .           .
  105        C13............
               .
               .
  108          .      SUB-18
               .           .
               .           .
  114        C18............
               V
               V
  117        R18
               .
               .
  122          .      SUB12A
               .           .
               .           .
  128       C12A............
               .
               .
  131          .      SUB33E
               .           .
               .           .
  137          .           .      SUB33F
               .           .           V
               .           .           V
  143          .           .        R33F
               .           .           .
               .           .           .
  148          .        C33F............
               .           .
               .           .
  151          .           .      SUB33D
               .           .           .
               .           .           .
```

```
157          C33D............
                V
                V
160          R33D
                .
                .
165             .      SUB33B
                .          .
                .          .
171          C33B............
                .
                .
174             .      SUB33C
                .          .
                .          .
180          C33C............
                V
                V
183          R33C
                .
                .
188             .      SUB33A
                .          .
                .          .
194          C33A............
                .
                .
197             .      SUB46A
                .          .
                .          .
203             .          .      SUB46B
                .          .          V
                .          .          V
209             .          .        R46B
                .          .          .
                .          .          .
214             .        C46............
                .          .
                .          .
217             .          .      SUB-45
                .          .          .
                .          .          .
223             .        C45............
                .          V
                .          V
226             .        R45
                .          .
                .          .
231             .          .      SUB-47
                .          .          .
                .          .          .
237             .        C47............
                .          .
                .          .
240             .          .      SUB-75
                .          .          .
                .          .          .
246             .          .          .      SUB-76
                .          .          .          .
                .          .          .          .
252             .          .        C76............
                .          .          V
                .          .          V
255             .          .        R76
                .          .          .
                .          .          .
260             .          .          .      SUB-73
                .          .          .          .
                .          .          .          .
266             .          .        C73............
                .          .          .
                .          .          .
269             .          .          .      SUB-74
                .          .          .          .
                .          .          .          .
275             .          .        C74............
                .          .          V
                .          .          V
278             .          .        R74
                .          .          .
                .          .          .
283             .          .          .      SUB-71
                .          .          .          .
                .          .          .          .
289             .          .        C71............
                .          .          .
                .          .          .
292             .          .          .      SUB-70
                .          .          .          V
                .          .          .          V
298             .          .          .        R70
                .          .          .          .
```

```
303                                   SUB-72
309                              C70
312                         C72
                             V
                             V
315                         R72
320                              SUB-69
327                                   HYDRO6
354                         C69
357                              SUB-57
363                         C57
                             V
                             V
366                         R69
371                              SUB-58
                                      V
                                      V
377                              R58
382                                   SUB-59
388                                            SUB-60
394                         C60
                             V
                             V
397                         R60
402                              SUB-61
408                         C61
                             V
                             V
411                         R61
416                              SUB-62
422                                   SUB-63
428                                            HYDRO2
455                                                      HYDRO3
482                         C63
                             V
                             V
485                         R63
490                              SUB-64
496                         C64
```

1

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

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

+		SUB14B	451.	12.20	47.	12.	4.	.27
+	HYDROGRAPH AT	SUB14C	918.	12.17	86.	22.	8.	.46
+	2 COMBINED AT	C14C	1355.	12.17	132.	33.	12.	.73
+	ROUTED TO	R14C	1297.	12.27	132.	33.	12.	.73
+	HYDROGRAPH AT	SUB14A	397.	12.13	37.	9.	3.	.18
+	2 COMBINED AT	C14A	1584.	12.23	168.	42.	15.	.91
+	HYDROGRAPH AT	SUB19A	243.	12.10	24.	7.	2.	.11
+	HYDROGRAPH AT	SUB19B	531.	12.13	58.	17.	6.	.26
+	HYDROGRAPH AT	SUB19C	233.	12.10	24.	7.	3.	.10
+	4 COMBINED AT	C19C	2437.	12.17	270.	72.	26.	1.38
+	ROUTED TO	R19C	2334.	12.30	270.	72.	26.	1.38
+	HYDROGRAPH AT	SUB-13	1180.	12.13	84.	22.	8.	.54
+	2 COMBINED AT	C13	2909.	12.23	352.	93.	34.	1.92
+	HYDROGRAPH AT	SUB-18	812.	12.17	88.	26.	9.	.38
+	2 COMBINED AT	C18	3640.	12.20	437.	118.	43.	2.30
+	ROUTED TO	R18	3574.	12.23	437.	118.	43.	2.30
+	HYDROGRAPH AT	SUB12A	193.	12.10	19.	5.	2.	.09
+	2 COMBINED AT	C12A	3699.	12.23	454.	123.	45.	2.39
+	HYDROGRAPH AT	SUB33E	448.	12.10	43.	12.	4.	.19
+	HYDROGRAPH AT	SUB33F	50.	12.07	4.	1.	0.	.02
+	ROUTED TO	R33F	49.	12.10	4.	1.	0.	.02
+	2 COMBINED AT	C33F	495.	12.10	47.	13.	5.	.22
+	HYDROGRAPH AT	SUB33D	42.	12.23	6.	2.	1.	.04
+	2 COMBINED AT	C33D	526.	12.10	53.	15.	5.	.25
+	ROUTED TO	R33D	513.	12.17	53.	15.	5.	.25
+	HYDROGRAPH AT	SUB33B	342.	12.13	32.	8.	3.	.16
+	2 COMBINED AT	C33B	832.	12.13	84.	23.	8.	.41
+	HYDROGRAPH AT	SUB33C	63.	12.10	8.	2.	1.	.03
+	2 COMBINED AT	C33C	892.	12.13	92.	25.	9.	.43
+	ROUTED TO	R33C	883.	12.17	92.	25.	9.	.43
+	HYDROGRAPH AT	SUB33A	150.	12.07	12.	3.	1.	.05

+	2 COMBINED AT	C33A	969.	12.17	104.	28.	10.	.49
+	HYDROGRAPH AT	SUB46A	68.	12.10	6.	2.	1.	.03
+	HYDROGRAPH AT	SUB46B	58.	12.10	6.	1.	1.	.03
+	ROUTED TO	R46B	57.	12.13	6.	1.	1.	.03
+	2 COMBINED AT	C46	123.	12.10	12.	3.	1.	.06
+	HYDROGRAPH AT	SUB-45	150.	12.17	21.	5.	2.	.09
+	2 COMBINED AT	C45	266.	12.13	32.	8.	3.	.15
+	ROUTED TO	R45	247.	12.37	32.	8.	3.	.15
+	HYDROGRAPH AT	SUB-47	320.	12.17	30.	8.	3.	.18
+	2 COMBINED AT	C47	467.	12.27	62.	16.	6.	.33
+	HYDROGRAPH AT	SUB-75	35.	12.07	3.	1.	0.	.02
+	HYDROGRAPH AT	SUB-76	45.	12.07	4.	1.	0.	.02
+	2 COMBINED AT	C76	80.	12.07	7.	2.	1.	.04
+	ROUTED TO	R76	77.	12.13	7.	2.	1.	.04
+	HYDROGRAPH AT	SUB-73	135.	12.07	12.	3.	1.	.06
+	2 COMBINED AT	C73	208.	12.10	18.	5.	2.	.09
+	HYDROGRAPH AT	SUB-74	350.	12.10	36.	11.	4.	.16
+	2 COMBINED AT	C74	554.	12.10	54.	16.	6.	.25
+	ROUTED TO	R74	539.	12.13	54.	16.	6.	.25
+	HYDROGRAPH AT	SUB-71	86.	12.07	7.	2.	1.	.04
+	2 COMBINED AT	C71	608.	12.13	61.	18.	6.	.28
+	HYDROGRAPH AT	SUB-70	139.	12.13	16.	5.	2.	.07
+	ROUTED TO	R70	139.	12.13	16.	5.	2.	.07
+	HYDROGRAPH AT	SUB-72	337.	12.10	33.	9.	3.	.16
+	2 COMBINED AT	C70	471.	12.13	48.	14.	5.	.23
+	2 COMBINED AT	C72	1072.	12.13	108.	31.	11.	.51
+	ROUTED TO	R72	1018.	12.23	108.	31.	11.	.51
+	HYDROGRAPH AT	SUB-69	963.	12.17	96.	28.	10.	.47
+	HYDROGRAPH AT	HYDRO6	1236.	12.40	273.	73.	26.	.00
+	3 COMBINED AT	C69	2903.	12.20	472.	131.	47.	.98
+	HYDROGRAPH AT	SUB-57	166.	12.07	13.	4.	1.	.07

+	2 COMBINED AT	C57	2985.	12.20	484.	134.	48.	1.05
+	ROUTED TO	R69	2914.	12.27	484.	134.	48.	1.05
+	HYDROGRAPH AT	SUB-58	243.	12.10	18.	5.	2.	.11
+	ROUTED TO	R58	238.	12.10	18.	5.	2.	.11
+	HYDROGRAPH AT	SUB-59	86.	12.27	14.	4.	1.	.08
+	HYDROGRAPH AT	SUB-60	133.	12.23	19.	5.	2.	.09
+	4 COMBINED AT	C60	3251.	12.23	533.	147.	53.	1.33
+	ROUTED TO	R60	3251.	12.27	533.	147.	53.	1.33
+	HYDROGRAPH AT	SUB-61	187.	12.27	32.	9.	3.	.14
+	2 COMBINED AT	C61	3431.	12.27	563.	155.	56.	1.47
+	ROUTED TO	R61	3408.	12.30	563.	155.	56.	1.47
+	HYDROGRAPH AT	SUB-62	168.	12.20	21.	5.	2.	.10
+	HYDROGRAPH AT	SUB-63	140.	12.17	19.	5.	2.	.08
+	HYDROGRAPH AT	HYDRO2	209.	12.60	46.	12.	4.	.00
+	HYDROGRAPH AT	HYDRO3	558.	12.60	66.	16.	6.	.00
+	5 COMBINED AT	C63	3744.	12.27	712.	193.	70.	1.66
+	ROUTED TO	R63	3740.	12.33	712.	193.	70.	1.66
+	HYDROGRAPH AT	SUB-64	119.	12.17	16.	4.	1.	.07
+	2 COMBINED AT	C64	3829.	12.33	727.	197.	71.	1.73

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

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            JUN   1998                *
*          VERSION 4.1                 *
*                                      *
*  RUN DATE   25JUL07  TIME  09:04:43  *
*                                      *
****************************************
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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


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

   1          ID   Project ID: 40933-F6HR - Major Basin: 01 - Return Period: 100 Years
   2          ID
   3          ID
   4          ID   CAVECREEK DRAINAGE MASTER PLAN
   5          ID   FLOODPLAIN DELINEATION STUDY OF CAVECREEK TRIBUTARIES, WILLOW SPRINGS WASH
   6          ID   TRIBUTARIES, GALLOWAY TRIBUTARIES, AND MORMAN GIRL WASH TRIBUTARIES.
   7          ID   FCD CONTRACT #2004C072
   8          ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   9          ID   PREPARED BY HDR ENGINEERING-JULY 2007
  10          ID   FILE NAME: F100-6.DAT
  11          ID
  12          ID   ******************************************************************************
  13          ID   100-YEAR, 6-HOUR STORM EVENT
  14          ID   MULTIPLE STORM EVENT
  15          ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
  16          ID   FUTURE LAND USE FROM ZONING MAP
  17          ID   ******************************************************************************
  18          ID
  19          ID
  20          ID
              *DIAGRAM
  21          IT       2                    2000
  22          IO       3
  23          IN      15
  24          JD    3.40    0.01
  25          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  26          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  27          PC   0.962   0.972   0.983   0.991   1.000
  28          JD   3.378    0.50
  29          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
  30          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
  31          PC   0.962   0.972   0.983   0.991   1.000
  32          JD   3.314    2.80
  33          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
  34          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
  35          PC   0.950   0.963   0.975   0.988   1.000
  36          JD   3.135    16.0
  37          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
  38          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
  39          PC   0.946   0.960   0.973   0.987   1.000
  40          JD   2.761    90.0
  41          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
  42          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
  43          PC   0.927   0.945   0.964   0.982   1.000
  44          JD   1.938   500.0
  45          PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
  46          PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
  47          PC   0.907   0.930   0.954   0.977   1.000

  48          KK  SUB14B   BASIN
  49          BA   0.267
              *
  50          LG    0.30    0.15    7.00    0.11       5
  51          UC   0.304   0.291
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  52        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1                                          HEC-1 INPUT                                          PAGE  2

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

  53        UA     100
            *

  54        KK  SUB14C   BASIN
  55        BA   0.458
  56        LG    0.30    0.15    7.60    0.09       6
  57        UC   0.275   0.215
  58        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  59        UA     100
            *

  60        KK    C14C
  61        KM   COMBINE SUB-14B, AND SUB-14C
  62        HC       2
            *

  63        KK    R14C   ROUTE   REACH
  64        RS       4    FLOW      -1
  65        RC   0.053   0.045   0.053    3270  0.0130  246.00
  66        RX     0.0     4.8     9.6    14.5    39.4    78.3    94.4   110.1
  67        RY   246.0   244.0   242.0   240.0   240.0   242.0   244.0   246.0
            *

  68        KK  SUB14A   BASIN
  69        BA   0.180
  70        LG    0.30    0.15    8.00    0.08       8
  71        UC   0.229   0.187
  72        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  73        UA     100
            *

  74        KK    C14A
  75        KM   COMBINE R14C AND SUB-14A
  76        HC       2
            *

  77        KK  SUB19A   BASIN
  78        BA   0.111
  79        LG    0.30    0.15    7.60    0.09      24
  80        UC   0.208   0.201
  81        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  82        UA     100
            *

  83        KK  SUB19B   BASIN
  84        BA   0.257
  85        LG    0.32    0.24    7.00    0.11      31
  86        UC   0.246   0.216
  87        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  88        UA     100
            *
1                                          HEC-1 INPUT                                          PAGE  3

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

  89        KK  SUB19C   BASIN
  90        BA   0.105
  91        LG    0.30    0.16    7.30    0.10      35
  92        UC   0.200   0.195
  93        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  94        UA     100
            *

  95        KK    C19C
  96        KM   COMBINE C14A, SUB-19A, SUB-19B, AND SUB-19C
  97        HC       4
            *

  98        KK    R19C   ROUTE   REACH
  99        RS       5    FLOW      -1
 100        RC   0.053   0.045   0.053    4116  0.0114  204.00
 101        RX     0.0    47.6    66.1    87.7   106.8   112.7   131.1   138.9
 102        RY   204.0   202.0   200.0   198.0   198.0   200.0   202.0   204.0
            *

 103        KK  SUB-13   BASIN
 104        BA   0.541
 105        LG    0.30    0.25    5.20    0.23       9
 106        UC   0.242   0.131
 107        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 108        UA     100
            *

 109        KK     C13
 110        KM   COMBINE R19C, AND SUB-13
 111        HC       2
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                *

112             KK  SUB-18   BASIN
113             BA   0.385
114             LG    0.31    0.19    7.30    0.10      34
115             UC   0.267   0.200
116             UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
117             UA     100
                *

118             KK     C18
119             KM   COMBINE C13, AND SUB-18
120             HC       2
                *

121             KK     R18   ROUTE   REACH
122             RS       1    FLOW      -1
123             RC   0.053   0.045   0.053    2572  0.0233  146.00
124             RX     0.0     2.6     5.9     9.9    20.8    24.7    27.3    30.4
125             RY   146.0   144.0   142.0   140.0   140.0   142.0   144.0   146.0
                *
1                                          HEC-1 INPUT                                          PAGE  4

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

126             KK  SUB12A   BASIN
127             BA   0.089
128             LG    0.30    0.19    6.60    0.13      25
129             UC   0.192   0.190
130             UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
131             UA     100
                *

132             KK    C12A
133             KM   COMBINE R18 AND SUB12A
134             HC       2
                *

135             KK  SUB33E   BASIN
136             BA   0.194
137             LG    0.30    0.17    6.80    0.12      30
138             UC   0.213   0.157
139             UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
140             UA     100
                *

141             KK  SUB33F   BASIN
142             BA   0.021
143             LG    0.30    0.17    6.80    0.12       5
144             UC   0.150   0.168
145             UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
146             UA     100
                *

147             KK    R33F   ROUTE   BASIN
148             RS       1    FLOW      -1
149             RC   0.053   0.045   0.053     477  0.0168  192.00
150             RX     0.0    15.0    30.0    40.5    41.5    52.5    73.7   108.0
151             RY   192.0   191.0   190.0   188.0   188.0   190.0   190.2   192.0
                *

152             KK    C33F
153             KM   COMBINE R33F AND SUB33E
154             HC       2
                *

155             KK  SUB33D   BASIN
156             BA   0.035
157             LG    0.30    0.25    5.70    0.19       7
158             UC   0.325   0.477
159             UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
160             UA     100
                *
1                                          HEC-1 INPUT                                          PAGE  5

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

161             KK    C33D
162             KM   COMBINE C33F AND SUB33D
163             HC       2
                *

164             KK    R33D   ROUTE   REACH
165             RS       4    FLOW      -1
166             RC   0.053   0.045   0.053    1637  0.0104  188.00
167             RX     0.0    49.3    60.6    71.9    83.0   133.7   175.9   214.2
168             RY   188.0   186.0   184.0   182.0   182.0   184.0   186.0   188.0
                *

169             KK  SUB33B   BASIN
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170          BA   0.155
171          LG    0.30    0.15    7.30    0.10       5
172          UC   0.213   0.181
173          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
174          UA     100
             *

175          KK    C33B
176          KM   COMBINE R33D AND SUB33B
177          HC       2
             *

178          KK  SUB33C   BASIN
179          BA   0.028
180          LG    0.30    0.13   10.10    0.03       5
181          UC   0.192   0.218
182          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
183          UA     100
             *

184          KK    C33C
185          KM   COMBINE C33B AND SUB33C
186          HC       2
             *

187          KK    R33C   ROUTE   REACH
188          RS       2    FLOW      -1
189          RC   0.053   0.045   0.053    1320  0.0159  158.00
190          RX     0.0     6.5    14.3    25.5    44.2    52.6    58.3    64.3
191          RY   158.0   156.0   154.0   152.0   152.0   154.0   156.0   158.0
             *

192          KK  SUB33A   BASIN
193          BA   0.055
194          LG    0.30    0.15    7.00    0.11       8
195          UC   0.142   0.100
196          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
197          UA     100
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

198          KK    C33A
199          KM   COMBINE R33C AND SUB33A
200          HC       2
             *
             *

201          KK  SUB46A   BASIN
202          BA   0.032
203          LG    0.30    0.15    7.00    0.11       5
204          UC   0.171   0.206
205          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
206          UA     100
             *

207          KK  SUB46B   BASIN
208          BA   0.031
209          LG    0.30    0.15    7.00    0.11       5
210          UC   0.188   0.263
211          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
212          UA     100
             *

213          KK    R46B   ROUTE   BASIN
214          RS       1    FLOW      -1
215          RC   0.053   0.045   0.053     564  0.0390  262.00
216          RX     0.0     8.2    16.6    27.9    50.0    57.9    65.9    73.0
217          RY   262.0   260.0   258.0   256.0   256.0   258.0   260.0   262.0
             *

218          KK     C46
219          KM   COMBINE R46B AND SUB46A
220          HC       2
             *

221          KK  SUB-45   BASIN
222          BA   0.088
223          LG    0.30    0.15    9.70    0.04       5
224          UC   0.258   0.350
225          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
226          UA     100
             *

227          KK     C45
228          KM   COMBINE C46 AND SUB-45
229          HC       2
             *

230          KK     R45   ROUTE   REACH
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```
231          RS       10    FLOW      -1
232          RC    0.053   0.045   0.053    4898  0.0218  192.00
233          RX      0.0    26.3    64.2   107.1   146.4   157.7   166.9   176.3
234          RY    192.0   190.0   188.0   186.0   186.0   188.0   190.0   192.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

235          KK  SUB-47   BASIN
236          BA   0.178
237          LG    0.30    0.25    5.40    0.21       5
238          UC   0.275   0.240
239          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
240          UA     100
             *

241          KK     C47
242          KM   COMBINE R45 AND SUB47
243          HC       2
             *
             *

244          KK  SUB-75   BASIN
245          BA   0.016
246          LG    0.23    0.25    6.00    0.22      54
247          UC   0.133   0.176
248          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
249          UA     100
             *

250          KK  SUB-76   BASIN
251          BA   0.020
252          LG    0.26    0.25    5.20    0.31      30
253          UC   0.138   0.160
254          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
255          UA     100
             *

256          KK     C76
257          KM   COMBINE SUB-75, AND SUB-76
258          HC       2
             *

259          KK     R76   ROUTE   REACH
260          RS       3    FLOW      -1
261          RC    0.053   0.045   0.053     919  0.0152  114.00
262          RX      0.0    44.9    63.2    67.9    71.3   107.2   136.4   159.2
263          RY    114.0   112.0   110.0   108.0   108.0   110.0   112.0   114.0
             *

264          KK  SUB-73   BASIN
265          BA   0.056
266          LG    0.28    0.19    6.60    0.17      47
267          UC   0.167   0.155
268          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
269          UA     100
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

270          KK     C73
271          KM   COMBINE R76 AND SUB-73
272          HC       2
             *

273          KK  SUB-74   BASIN
274          BA   0.156
275          LG    0.29    0.17    6.80    0.14      37
276          UC   0.208   0.176
277          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
278          UA     100
             *

279          KK     C74
280          KM   COMBINE C73 AND SUB-74
281          HC       2
             *

282          KK     R74   ROUTE   REACH
283          RS       2    FLOW      -1
284          RC    0.053   0.045   0.053    1412  0.0212   92.00
285          RX      0.0    25.4    69.1    79.9    84.8    92.1    99.9   130.3
286          RY     92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *

287          KK  SUB-71   BASIN
288          BA   0.035
289          LG    0.28    0.19    6.60    0.17      43
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```
290          UC   0.150   0.149
291          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
292          UA     100
             *

293          KK     C71
294          KM   COMBINE R74 AND SUB-71
295          HC       2
             *

296          KK  SUB-70   BASIN
297          BA   0.072
298          LG    0.30    0.19    6.60    0.14      28
299          UC   0.208   0.255
300          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
301          UA     100
             *

302          KK     R70   ROUTE   BASIN
303          RS       1    FLOW      -1
304          RC   0.053   0.045   0.053     403  0.0546   92.00
305          RX     0.0    10.7    21.5    44.3    64.8    88.0   122.0   149.0
306          RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

307          KK  SUB-72   BASIN
308          BA   0.155
309          LG    0.29    0.19    6.60    0.14      30
310          UC   0.213   0.184
311          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
312          UA     100
             *

313          KK     C70
314          KM   COMBINE R70 AND SUB-72
315          HC       2
             *

316          KK     C72
317          KM   COMBINE C70 AND C71
318          HC       2
             *

319          KK     R72   ROUTE   REACH
320          RS       4    FLOW      -1
321          RC   0.053   0.045   0.053    3492  0.0218    6.00
322          RX     0.0    21.3    57.8    75.7    77.8    85.0    92.5    99.9
323          RY     5.0     4.0     2.0     0.0     0.0     2.0     4.0     6.0
             *

324          KK  SUB-69   BASIN
325          BA   0.471
326          LG    0.30    0.25    6.00    0.18      25
327          UC   0.267   0.192
328          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
329          UA     100
             *

330          KK     C69
331          KM   COMBINE R72 AND SUB-69
332          HC       2
             *

333          KK  SUB-57   BASIN
334          BA   0.066
335          LG    0.30    0.25    5.80    0.18      18
336          UC   0.150   0.114
337          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
338          UA     100
             *

339          KK     C57
340          KM   COMBINE SUB-57 AND C69
341          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

342          KK     R69   ROUTE   REACH
343          RS       3    FLOW      -1
344          RC   0.053   0.045   0.053    2610  0.0146  972.00
345          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
346          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *

347          KK  SUB-58   BASIN
```

```
348          BA    0.111
349          LG     0.30     0.25     5.30     0.22        6
350          UC    0.192    0.159
351          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
352          UA      100
             *

353          KK      R58    ROUTE    BASIN
354          RS        1     FLOW       -1
355          RC    0.053    0.045    0.053      455   0.0132   972.00
356          RX      0.0     36.7     77.1     91.0    126.4    146.8    157.7    170.6
357          RY    972.0    970.0    968.0    966.0    966.0    968.0    970.0    972.0
             *

358          KK   SUB-59    BASIN
359          BA    0.082
360          LG     0.30     0.25     5.00     0.29       11
361          UC    0.388    0.584
362          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
363          UA      100
             *

364          KK   SUB-60    BASIN
365          BA    0.092
366          LG     0.30     0.15     7.00     0.13       11
367          UC    0.333    0.426
368          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
369          UA      100
             *

370          KK      C60
371          KM   COMBINE R69, R58, SUB-59, SUB-60
372          HC        4
             *

373          KK      R60    ROUTE    REACH
374          RS        1     FLOW       -1
375          RC    0.053    0.045    0.053      420   0.0143   960.00
376          RX      0.0     42.8     63.6     82.6    106.8    117.5    120.1    182.8
377          RY    964.0    962.0    960.0    958.0    958.0    960.0    960.0    960.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

378          KK   SUB-61    BASIN
379          BA    0.142
380          LG     0.30     0.15     7.60     0.10       12
381          UC    0.388    0.514
382          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
383          UA      100
             *

384          KK      C61
385          KM   COMBINE R60, AND SUB-61
386          HC        2
             *

387          KK      R61    ROUTE    REACH
388          RS        1     FLOW       -1
389          RC    0.053    0.045    0.053      780   0.0103   950.00
390          RX      0.0      7.4     14.6     36.2     47.1     62.9     69.6     76.4
391          RY    950.0    948.0    946.0    946.0    946.0    946.0    948.0    950.0
             *

392          KK   SUB-62    BASIN
393          BA    0.098
394          LG     0.26     0.15     7.60     0.10       20
395          UC    0.279    0.302
396          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
397          UA      100
             *

398          KK   SUB-63    BASIN
399          BA    0.082
400          LG     0.27     0.15     8.00     0.08       16
401          UC    0.271    0.323
402          UA        0      3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
403          UA      100
             *

404          KK      C63
405          KM   COMBINE R61, SUB-62, AND SUB-63
406          HC        3
             *

407          KK      R63    ROUTE    REACH
408          RS        2     FLOW       -1
409          RC    0.053    0.045    0.053     2145   0.0196   922.00
410          RX      0.0      4.2      8.2     12.2     36.3     41.2     45.8     50.4
411          RY    922.0    920.0    918.0    916.0    916.0    918.0    920.0    922.0
```

```
                    *
 412                KK  SUB-64   BASIN
 413                BA   0.071
 414                LG    0.30    0.15    7.30    0.10       5
 415                UC   0.279   0.343
 416                UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 417                UA     100
                    *
1                                                HEC-1 INPUT                                                PAGE 12

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

 418                KK     C64
 419                KM   COMBINE R63, AND SUB-64
 420                HC       2
                    *
 421                ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   48     SUB14B
               .
               .
   54          .      SUB14C
               .           .
               .           .
   60       C14C............
               V
               V
   63       R14C
               .
               .
   68          .      SUB14A
               .           .
               .           .
   74       C14A............
               .
               .
   77          .      SUB19A
               .           .
               .           .
   83          .           .      SUB19B
               .           .           .
               .           .           .
   89          .           .           .      SUB19C
               .           .           .           .
               .           .           .           .
   95       C19C.................................
               V
               V
   98       R19C
               .
               .
  103          .      SUB-13
               .           .
               .           .
  109        C13............
               .
               .
  112          .      SUB-18
               .           .
               .           .
  118        C18............
               V
               V
  121        R18
               .
               .
  126          .      SUB12A
               .           .
               .           .
  132       C12A............
               .
               .
  135          .      SUB33E
               .           .
               .           .
  141          .           .      SUB33F
               .           .           V
               .           .           V
  147          .           .        R33F
               .           .           .
               .           .           .
  152          .        C33F............
               .           .
               .           .
```

```
155     .       .       SUB33D
        .       .          .
        .       .          .
161     .     C33D...........
        .       V
        .       V
164     .     R33D
        .       .
        .       .
169     .       .       SUB33B
        .       .          .
        .       .          .
175     .     C33B...........
        .       .
        .       .
178     .       .       SUB33C
        .       .          .
        .       .          .
184     .     C33C...........
        .       V
        .       V
187     .     R33C
        .       .
        .       .
192     .       .       SUB33A
        .       .          .
        .       .          .
198     .     C33A...........
        .       .
        .       .
201     .       .       SUB46A
        .       .          .
        .       .          .
207     .       .          .       SUB46B
        .       .          .          V
        .       .          .          V
213     .       .          .        R46B
        .       .          .          .
        .       .          .          .
218     .       .        C46...........
        .       .          .
        .       .          .
221     .       .          .       SUB-45
        .       .          .          .
        .       .          .          .
227     .       .        C45...........
        .       .          V
        .       .          V
230     .       .        R45
        .       .          .
        .       .          .
235     .       .          .       SUB-47
        .       .          .          .
        .       .          .          .
241     .       .        C47...........
        .       .          .
        .       .          .
244     .       .          .       SUB-75
        .       .          .          .
        .       .          .          .
250     .       .          .          .       SUB-76
        .       .          .          .          .
        .       .          .          .          .
256     .       .          .        C76...........
        .       .          .          V
        .       .          .          V
259     .       .          .        R76
        .       .          .          .
        .       .          .          .
264     .       .          .          .       SUB-73
        .       .          .          .          .
        .       .          .          .          .
270     .       .          .        C73...........
        .       .          .          .
        .       .          .          .
273     .       .          .          .       SUB-74
        .       .          .          .          .
        .       .          .          .          .
279     .       .          .        C74...........
        .       .          .          V
        .       .          .          V
282     .       .          .        R74
        .       .          .          .
        .       .          .          .
287     .       .          .          .       SUB-71
        .       .          .          .          .
        .       .          .          .          .
293     .       .          .        C71...........
        .       .          .          .
        .       .          .          .
296     .       .          .          .       SUB-70
        .       .          .          .          V
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                                                  V
302                                             R70
                                                   .
307                                                .      SUB-72
                                                   .           .
313                                             C70............
                                                   .
                                                   .
316                                        C72............
                                              V
                                              V
319                                        R72
                                                   .
                                                   .
324                                                .      SUB-69
                                                   .           .
                                                   .
330                                        C69............
                                                   .
                                                   .
333                                                .      SUB-57
                                                   .           .
                                                   .
339                                        C57............
                                              V
                                              V
342                                        R69
                                                   .
                                                   .
347                                                .      SUB-58
                                                   .           V
                                                   .           V
353                                                .         R58
                                                   .           .
                                                   .           .
358                                                .           .      SUB-59
                                                   .           .           .
                                                   .           .           .
364                                                .           .           .      SUB-60
                                                   .           .           .           .
                                                   .           .           .           .
370                                        C60.................................
                                              V
                                              V
373                                        R60
                                                   .
                                                   .
378                                                .      SUB-61
                                                   .           .
                                                   .           .
384                                        C61............
                                              V
                                              V
387                                        R61
                                                   .
                                                   .
392                                                .      SUB-62
                                                   .           .
                                                   .           .
398                                                .           .      SUB-63
                                                   .           .           .
                                                   .           .           .
404                                        C63......................
                                              V
                                              V
407                                        R63
                                                   .
                                                   .
412                                                .      SUB-64
                                                   .           .
                                                   .           .
418                                        C64............
```

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB14B	597.	4.20	64.	16.	6.	.27		
+	HYDROGRAPH AT	SUB14C	1192.	4.17	113.	28.	10.	.46		
	2 COMBINED AT									

+	C14C	1640.	4.17	175.	44.	16.	.73
ROUTED TO	R14C	1588.	4.23	174.	44.	16.	.73
HYDROGRAPH AT +	SUB14A	504.	4.13	45.	11.	4.	.18
2 COMBINED AT +	C14A	1841.	4.23	217.	54.	20.	.91
HYDROGRAPH AT +	SUB19A	308.	4.10	30.	7.	3.	.11
HYDROGRAPH AT +	SUB19B	675.	4.13	68.	17.	6.	.26
HYDROGRAPH AT +	SUB19C	298.	4.10	29.	7.	3.	.10
4 COMBINED AT +	C19C	2554.	4.17	337.	84.	30.	1.38
ROUTED TO +	R19C	2481.	4.30	337.	84.	30.	1.38
HYDROGRAPH AT +	SUB-13	1521.	4.13	114.	28.	10.	.54
2 COMBINED AT +	C13	2958.	4.23	436.	109.	39.	1.92
HYDROGRAPH AT +	SUB-18	1043.	4.13	105.	26.	10.	.38
2 COMBINED AT +	C18	3468.	4.20	533.	134.	48.	2.30
ROUTED TO +	R18	3435.	4.23	533.	134.	48.	2.30
HYDROGRAPH AT +	SUB12A	250.	4.10	23.	6.	2.	.09
2 COMBINED AT +	C12A	3528.	4.23	554.	139.	50.	2.39
HYDROGRAPH AT +	SUB33E	579.	4.10	52.	13.	5.	.19
HYDROGRAPH AT +	SUB33F	62.	4.07	5.	1.	0.	.02
ROUTED TO +	R33F	60.	4.10	5.	1.	0.	.02
2 COMBINED AT +	C33F	639.	4.10	57.	14.	5.	.22
HYDROGRAPH AT +	SUB33D	56.	4.20	8.	2.	1.	.04
2 COMBINED AT +	C33D	683.	4.10	64.	16.	6.	.25
ROUTED TO +	R33D	668.	4.17	64.	16.	6.	.25
HYDROGRAPH AT +	SUB33B	436.	4.10	38.	9.	3.	.16
2 COMBINED AT +	C33B	1082.	4.13	102.	26.	9.	.41
HYDROGRAPH AT +	SUB33C	78.	4.10	8.	2.	1.	.03
2 COMBINED AT +	C33C	1158.	4.13	110.	27.	10.	.43
ROUTED TO +	R33C	1146.	4.17	110.	27.	10.	.43
HYDROGRAPH AT +	SUB33A	186.	4.07	13.	3.	1.	.05
2 COMBINED AT +	C33A	1252.	4.13	123.	31.	11.	.49
HYDROGRAPH AT	SUB46A	87.	4.10	8.	2.	1.	.03

+	HYDROGRAPH AT	SUB46B	76.	4.10	7.	2.	1.	.03
+	ROUTED TO	R46B	75.	4.13	7.	2.	1.	.03
+	2 COMBINED AT	C46	161.	4.10	15.	4.	1.	.06
+	HYDROGRAPH AT	SUB-45	191.	4.17	23.	6.	2.	.09
+	2 COMBINED AT	C45	345.	4.13	38.	10.	3.	.15
+	ROUTED TO	R45	321.	4.33	38.	10.	3.	.15
+	HYDROGRAPH AT	SUB-47	410.	4.17	37.	9.	3.	.18
+	2 COMBINED AT	C47	625.	4.23	75.	19.	7.	.33
+	HYDROGRAPH AT	SUB-75	48.	4.07	5.	1.	0.	.02
+	HYDROGRAPH AT	SUB-76	58.	4.07	5.	1.	0.	.02
+	2 COMBINED AT	C76	105.	4.07	9.	2.	1.	.04
+	ROUTED TO	R76	101.	4.10	9.	2.	1.	.04
+	HYDROGRAPH AT	SUB-73	171.	4.07	16.	4.	1.	.06
+	2 COMBINED AT	C73	271.	4.10	25.	6.	2.	.09
+	HYDROGRAPH AT	SUB-74	451.	4.10	43.	11.	4.	.16
+	2 COMBINED AT	C74	720.	4.10	68.	17.	6.	.25
+	ROUTED TO	R74	702.	4.13	68.	17.	6.	.25
+	HYDROGRAPH AT	SUB-71	109.	4.07	10.	2.	1.	.04
+	2 COMBINED AT	C71	794.	4.13	78.	19.	7.	.28
+	HYDROGRAPH AT	SUB-70	178.	4.13	19.	5.	2.	.07
+	ROUTED TO	R70	177.	4.13	19.	5.	2.	.07
+	HYDROGRAPH AT	SUB-72	435.	4.10	41.	10.	4.	.16
+	2 COMBINED AT	C70	608.	4.13	60.	15.	5.	.23
+	2 COMBINED AT	C72	1393.	4.13	137.	34.	12.	.51
+	ROUTED TO	R72	1328.	4.20	137.	34.	12.	.51
+	HYDROGRAPH AT	SUB-69	1235.	4.13	114.	29.	10.	.47
+	2 COMBINED AT	C69	2126.	4.17	244.	61.	22.	.98
+	HYDROGRAPH AT	SUB-57	211.	4.07	15.	4.	1.	.07
+	2 COMBINED AT	C57	2201.	4.17	258.	65.	23.	1.05
+	ROUTED TO	R69	2152.	4.23	258.	65.	23.	1.05
+	HYDROGRAPH AT	SUB-58	310.	4.10	23.	6.	2.	.11

	ROUTED TO	R58	305.	4.10	23.	6.	2.	.11
+	HYDROGRAPH AT	SUB-59	108.	4.27	17.	4.	2.	.08
+	HYDROGRAPH AT	SUB-60	168.	4.20	22.	6.	2.	.09
+	4 COMBINED AT	C60	2404.	4.23	314.	79.	28.	1.33
+	ROUTED TO	R60	2397.	4.23	314.	79.	28.	1.33
+	HYDROGRAPH AT	SUB-61	233.	4.27	36.	9.	3.	.14
+	2 COMBINED AT	C61	2515.	4.23	346.	87.	31.	1.47
+	ROUTED TO	R61	2508.	4.27	346.	87.	31.	1.47
+	HYDROGRAPH AT	SUB-62	224.	4.17	26.	6.	2.	.10
+	HYDROGRAPH AT	SUB-63	183.	4.17	22.	5.	2.	.08
+	3 COMBINED AT	C63	2708.	4.27	390.	98.	35.	1.65
+	ROUTED TO	R63	2696.	4.30	390.	98.	35.	1.65
+	HYDROGRAPH AT	SUB-64	149.	4.17	17.	4.	2.	.07
+	2 COMBINED AT	C64	2765.	4.30	405.	102.	37.	1.72

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

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            JUN   1998                 *
*          VERSION 4.1                  *
*                                       *
*  RUN DATE   25JUL07  TIME  09:28:58   *
*                                       *
*****************************************
```

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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
```

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


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

  1           ID   Project ID: 40933-F24HR - Major Basin: 01 - Return Period: 100 Years
  2           ID
  3           ID
  4           ID   CAVECREEK DRAINAGE MASTER PLAN
  5           ID   FLOODPLAIN DELINEATION STUDY OF CAVECREEK TRIBUTARIES, WILLOW SPRINGS WASH
  6           ID   TRIBUTARIES, GALLOWAY TRIBUTARIES, AND MORMAN GIRL WASH TRIBUTARIES.
  7           ID   FCD CONTRACT #2004C072
  8           ID   PREPARED FOR FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
  9           ID   PREPARED BY HDR ENGINEERING-JULY 2007
 10           ID   FILE NAME: F100-24.DAT
 11           ID
 12           ID   ******************************************************************************
 13           ID   100-YEAR, 24-HOUR STORM EVENT
 14           ID   MULTIPLE STORM EVENT
 15           ID   GREEN-AMPT LOSS METHOD, CLARK UNIT HYDROGRAPH
 16           ID   FUTURE LAND USE FROM ZONING MAP
 17           ID   ******************************************************************************
 18           ID
 19           ID
 20           ID
              *DIAGRAM
 21           IT       2                    2000
 22           IO       3
 23           IN      15
 24           JD    4.60    0.01
 25           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 26           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 27           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 28           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 29           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 30           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 31           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 32           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 33           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 34           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 35           JD   4.324      10
 36           JD   4.140      30
 37           JD   3.956      60
 38           JD   3.892      90
 39           JD   3.836     120
 40           JD   3.795     150
 41           JD   3.680     300
 42           JD   3.588     500

 43           KK  SUB14B   BASIN
 44           BA   0.267
              *
 45           LG    0.30    0.15    7.00    0.11       5
 46           UC   0.321   0.309
 47           UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 48           UA     100
              *
```

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

  49          KK  SUB14C   BASIN
  50          BA   0.458
  51          LG    0.30    0.15    7.60    0.09       6
  52          UC   0.292   0.229
  53          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  54          UA     100
              *

  55          KK    C14C
  56          KM   COMBINE SUB-14B, AND SUB-14C
  57          HC       2
              *

  58          KK    R14C   ROUTE   REACH
  59          RS       4    FLOW      -1
  60          RC   0.053   0.045   0.053    3270  0.0130  246.00
  61          RX     0.0     4.8     9.6    14.5    39.4    78.3    94.4   110.1
  62          RY   246.0   244.0   242.0   240.0   240.0   242.0   244.0   246.0
              *

  63          KK  SUB14A   BASIN
  64          BA   0.180
  65          LG    0.30    0.15    8.00    0.08       8
  66          UC   0.242   0.198
  67          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  68          UA     100
              *

  69          KK    C14A
  70          KM   COMBINE R14C AND SUB-14A
  71          HC       2
              *

  72          KK  SUB19A   BASIN
  73          BA   0.111
  74          LG    0.30    0.15    7.60    0.09      24
  75          UC   0.217   0.210
  76          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  77          UA     100
              *

  78          KK  SUB19B   BASIN
  79          BA   0.257
  80          LG    0.32    0.24    7.00    0.11      31
  81          UC   0.258   0.229
  82          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  83          UA     100
              *
```



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

  84          KK  SUB19C   BASIN
  85          BA   0.105
  86          LG    0.30    0.16    7.30    0.10      35
  87          UC   0.213   0.208
  88          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  89          UA     100
              *

  90          KK    C19C
  91          KM   COMBINE C14A, SUB-19A, SUB-19B, AND SUB-19C
  92          HC       4
              *

  93          KK    R19C   ROUTE   REACH
  94          RS       5    FLOW      -1
  95          RC   0.053   0.045   0.053    4116  0.0114  204.00
  96          RX     0.0    47.6    66.1    87.7   106.8   112.7   131.1   138.9
  97          RY   204.0   202.0   200.0   198.0   198.0   200.0   202.0   204.0
              *

  98          KK  SUB-13   BASIN
  99          BA   0.541
 100          LG    0.30    0.25    5.20    0.23       9
 101          UC   0.250   0.136
 102          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 103          UA     100
              *

 104          KK     C13
 105          KM   COMBINE R19C AND SUB-13
 106          HC       2
              *

 107          KK  SUB-18   BASIN
 108          BA   0.385
 109          LG    0.31    0.19    7.30    0.10      34
```

```
 110          UC   0.283   0.214
 111          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 112          UA     100
              *

 113          KK     C18
 114          KM   COMBINE C13, AND SUB-18
 115          HC       2
              *

 116          KK     R18   ROUTE   REACH
 117          RS       1    FLOW      -1
 118          RC   0.053   0.045   0.053    2572  0.0233  146.00
 119          RX     0.0     2.6     5.9     9.9    20.8    24.7    27.3    30.4
 120          RY   146.0   144.0   142.0   140.0   140.0   142.0   144.0   146.0
              *
1                                          HEC-1 INPUT                                          PAGE  4

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

 121          KK  SUB12A   BASIN
 122          BA   0.089
 123          LG    0.30    0.19    6.60    0.13      25
 124          UC   0.204   0.204
 125          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 126          UA     100
              *

 127          KK    C12A
 128          KM   COMBINE R18 AND SUB12A
 129          HC       2
              *

 130          KK  SUB33E   BASIN
 131          BA   0.194
 132          LG    0.30    0.17    6.80    0.12      30
 133          UC   0.221   0.163
 134          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 135          UA     100
              *

 136          KK  SUB33F   BASIN
 137          BA   0.021
 138          LG    0.30    0.17    6.80    0.12       5
 139          UC   0.158   0.178
 140          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 141          UA     100
              *

 142          KK    R33F   ROUTE   BASIN
 143          RS       1    FLOW      -1
 144          RC   0.053   0.045   0.053     477  0.0168  192.00
 145          RX     0.0    15.0    30.0    40.5    41.5    52.5    73.7   108.0
 146          RY   192.0   191.0   190.0   188.0   188.0   190.0   190.2   192.0
              *

 147          KK    C33F
 148          KM   COMBINE R33F AND SUB33E
 149          HC       2
              *

 150          KK  SUB33D   BASIN
 151          BA   0.035
 152          LG    0.30    0.25    5.70    0.19       7
 153          UC   0.342   0.505
 154          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 155          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 156          KK    C33D
 157          KM   COMBINE C33F AND SUB33D
 158          HC       2
              *

 159          KK    R33D   ROUTE   REACH
 160          RS       4    FLOW      -1
 161          RC   0.053   0.045   0.053    1637  0.0104  188.00
 162          RX     0.0    49.3    60.6    71.9    83.0   133.7   175.9   214.2
 163          RY   188.0   186.0   184.0   182.0   182.0   184.0   186.0   188.0
              *

 164          KK  SUB33B   BASIN
 165          BA   0.155
 166          LG    0.30    0.15    7.30    0.10       5
 167          UC   0.221   0.189
 168          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 169          UA     100
```

```
            *

170         KK    C33B
171         KM   COMBINE R33D AND SUB33B
172         HC       2
            *

173         KK  SUB33C   BASIN
174         BA   0.028
175         LG    0.30    0.13   10.10    0.03       5
176         UC   0.200   0.229
177         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
178         UA     100
            *

179         KK    C33C
180         KM   COMBINE C33B AND SUB33C
181         HC       2
            *

182         KK    R33C   ROUTE   REACH
183         RS       2    FLOW      -1
184         RC   0.053   0.045   0.053    1320  0.0159  158.00
185         RX     0.0     6.5    14.3    25.5    44.2    52.6    58.3    64.3
186         RY   158.0   156.0   154.0   152.0   152.0   154.0   156.0   158.0
            *

187         KK  SUB33A   BASIN
188         BA   0.055
189         LG    0.30    0.15    7.00    0.11       8
190         UC   0.146   0.103
191         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
192         UA     100
            *
```



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

193         KK    C33A
194         KM   COMBINE R33C AND SUB33A
195         HC       2
            *
            *

196         KK  SUB46A   BASIN
197         BA   0.032
198         LG    0.30    0.15    7.00    0.11       5
199         UC   0.179   0.217
200         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
201         UA     100
            *

202         KK  SUB46B   BASIN
203         BA   0.031
204         LG    0.30    0.15    7.00    0.11       5
205         UC   0.196   0.276
206         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
207         UA     100
            *

208         KK    R46B   ROUTE   BASIN
209         RS       1    FLOW      -1
210         RC   0.053   0.045   0.053     564  0.0390  262.00
211         RX     0.0     8.2    16.6    27.9    50.0    57.9    65.9    73.0
212         RY   262.0   260.0   258.0   256.0   256.0   258.0   260.0   262.0
            *

213         KK     C46
214         KM   COMBINE R46B AND SUB46A
215         HC       2
            *

216         KK  SUB-45   BASIN
217         BA   0.088
218         LG    0.30    0.15    9.70    0.04       5
219         UC   0.271   0.369
220         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
221         UA     100
            *

222         KK     C45
223         KM   COMBINE C46 AND SUB-45
224         HC       2
            *

225         KK     R45   ROUTE   REACH
226         RS      10    FLOW      -1
227         RC   0.053   0.045   0.053    4898  0.0218  192.00
228         RX     0.0    26.3    64.2   107.1   146.4   157.7   166.9   176.3
229         RY   192.0   190.0   188.0   186.0   186.0   188.0   190.0   192.0
            *
```

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

  230         KK  SUB-47   BASIN
  231         BA   0.178
  232         LG    0.30    0.25    5.40    0.21       5
  233         UC   0.292   0.256
  234         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  235         UA     100
              *

  236         KK     C47
  237         KM   COMBINE R45 AND SUB47
  238         HC       2
              *
              *

  239         KK  SUB-75   BASIN
  240         BA   0.016
  241         LG    0.23    0.25    6.00    0.22      54
  242         UC   0.142   0.188
  243         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  244         UA     100
              *

  245         KK  SUB-76   BASIN
  246         BA   0.020
  247         LG    0.26    0.25    5.20    0.31      30
  248         UC   0.146   0.171
  249         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  250         UA     100
              *

  251         KK     C76
  252         KM   COMBINE SUB-75, AND SUB-76
  253         HC       2
              *

  254         KK     R76   ROUTE   REACH
  255         RS       3    FLOW      -1
  256         RC   0.053   0.045   0.053     919  0.0152  114.00
  257         RX     0.0    44.9    63.2    67.9    71.3   107.2   136.4   159.2
  258         RY   114.0   112.0   110.0   108.0   108.0   110.0   112.0   114.0
              *

  259         KK  SUB-73   BASIN
  260         BA   0.056
  261         LG    0.28    0.19    6.60    0.17      47
  262         UC   0.175   0.164
  263         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  264         UA     100
              *
```



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

  265         KK     C73
  266         KM   COMBINE R76 AND SUB-73
  267         HC       2
              *

  268         KK  SUB-74   BASIN
  269         BA   0.156
  270         LG    0.29    0.17    6.80    0.14      37
  271         UC   0.221   0.188
  272         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  273         UA     100
              *

  274         KK     C74
  275         KM   COMBINE C73 AND SUB-74
  276         HC       2
              *

  277         KK     R74   ROUTE   REACH
  278         RS       2    FLOW      -1
  279         RC   0.053   0.045   0.053    1412  0.0212   92.00
  280         RX     0.0    25.4    69.1    79.9    84.8    92.1    99.9   130.3
  281         RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
              *

  282         KK  SUB-71   BASIN
  283         BA   0.035
  284         LG    0.28    0.19    6.60    0.17      43
  285         UC   0.158   0.158
  286         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
  287         UA     100
              *
```

```
288          KK     C71
289          KM   COMBINE R74 AND SUB-71
290          HC       2
             *

291          KK  SUB-70   BASIN
292          BA   0.072
293          LG    0.30    0.19    6.60    0.14      28
294          UC   0.217   0.267
295          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
296          UA     100
             *

297          KK     R70   ROUTE   BASIN
298          RS       1    FLOW      -1
299          RC   0.053   0.045   0.053     403  0.0546   92.00
300          RX     0.0    10.7    21.5    44.3    64.8    88.0   122.0   149.0
301          RY    92.0    90.0    88.0    86.0    86.0    88.0    90.0    92.0
             *
1                                          HEC-1 INPUT                                          PAGE  9

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

302          KK  SUB-72   BASIN
303          BA   0.155
304          LG    0.29    0.19    6.60    0.14      30
305          UC   0.221   0.192
306          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
307          UA     100
             *

308          KK     C70
309          KM   COMBINE R70 AND SUB-72
310          HC       2
             *

311          KK     C72
312          KM   COMBINE C70 AND C71
313          HC       2
             *

314          KK     R72   ROUTE   REACH
315          RS       4    FLOW      -1
316          RC   0.053   0.045   0.053    3492  0.0218    6.00
317          RX     0.0    21.3    57.8    75.7    77.8    85.0    92.5    99.9
318          RY     5.0     4.0     2.0     0.0     0.0     2.0     4.0     6.0
             *

319          KK  SUB-69   BASIN
320          BA   0.471
321          LG    0.30    0.25    6.00    0.18      25
322          UC   0.279   0.202
323          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
324          UA     100
             *
325          IN       6
             *

326          KK  HYDRO6
327          BA   0.001
328          QI       0       0       0       0       0       0       0       0       0       0
329          QI       0       0       0       0       0       0       0       0       0       0
330          QI       0       0       0       0       0       0       0       0       0       0
331          QI       0       0       0       0       0       0       0       0       0       0
332          QI       0       0       0       0       0       0       0       0       0       0
333          QI       0       0       0       0       0       0       0       0       0       0
334          QI       0       0       0       0       0       0       0       0       0       0
335          QI       0       0       0       0       0       0       0       0       0       0
336          QI       0       0       0       0       0       0       0       0       0       0
337          QI       0       0       0       0    0.59    2.27    2.61    2.85    2.95     3.1
338          QI    3.29    3.52    3.71    3.83    4.02    4.18    4.39    4.72    5.19     5.7
339          QI    6.56   10.56    20.2   25.52   30.32   33.97   41.23   69.55  206.95  363.49
340          QI  608.08   767.6  995.12 1056.41 1235.54 1198.32 1078.59  945.57  854.97   782.6
341          QI  718.04     626  525.97  440.05  378.58  326.95  282.22  247.17  216.01  191.48
342          QI  170.93  153.54  139.24  126.93   116.2  107.13   98.18   91.55   85.28   79.28
343          QI   73.58   67.19   63.42   60.18   57.37   54.61   52.49   49.38    46.2    42.9
344          QI   40.71   38.54   37.29   34.88   33.38   32.08   30.76   29.61    28.8    27.6
1                                          HEC-1 INPUT                                          PAGE 10

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

345          QI   26.45   25.96   25.16   24.41   24.09   23.51    22.7   22.33   22.02   21.29
346          QI   20.86   20.15    19.6   19.19   18.52   18.22   17.76   17.28   16.92   16.81
347          QI   16.34      16   15.86   15.66   15.57   15.26   14.94   14.65   14.44   14.21
348          QI   14.08    13.7   13.42   13.02   12.69   12.44   12.24   12.11      12   11.91
349          QI   11.67   11.61   11.38   11.28   11.04   10.94   10.72   10.44   10.16    9.79
350          QI    9.67    9.43    9.27    9.04    8.84    8.76    8.62    8.52    8.44    8.37
351          QI    8.32    8.24    8.18    8.13    8.08       8    7.99       8       8    7.99
352          QI     0.1
             *
```

```
353          KK     C69
354          KM   COMBINE R72, SUB-69 AND HYDRO6
355          HC       3
             *

356          KK  SUB-57   BASIN
357          BA   0.066
358          LG    0.30    0.25    5.80    0.18      18
359          UC   0.158   0.121
360          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
361          UA     100
             *

362          KK     C57
363          KM   COMBINE SUB-57 AND C69
364          HC       2
             *

365          KK     R69   ROUTE   REACH
366          RS       3    FLOW      -1
367          RC   0.053   0.045   0.053    2610  0.0146  972.00
368          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
369          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *

370          KK  SUB-58   BASIN
371          BA   0.111
372          LG    0.30    0.25    5.30    0.22       6
373          UC   0.200   0.167
374          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
375          UA     100
             *

376          KK     R58   ROUTE   BASIN
377          RS       1    FLOW      -1
378          RC   0.053   0.045   0.053     455  0.0132  972.00
379          RX     0.0    36.7    77.1    91.0   126.4   146.8   157.7   170.6
380          RY   972.0   970.0   968.0   966.0   966.0   968.0   970.0   972.0
             *
```



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

381          KK  SUB-59   BASIN
382          BA   0.082
383          LG    0.30    0.25    5.00    0.29      11
384          UC   0.404   0.612
385          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
386          UA     100
             *

387          KK  SUB-60   BASIN
388          BA   0.092
389          LG    0.30    0.15    7.00    0.13      11
390          UC   0.350   0.450
391          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
392          UA     100
             *

393          KK     C60
394          KM   COMBINE R69, R58, SUB-59, SUB-60
395          HC       4
             *

396          KK     R60   ROUTE   REACH
397          RS       1    FLOW      -1
398          RC   0.053   0.045   0.053     420  0.0143  960.00
399          RX     0.0    42.8    63.6    82.6   106.8   117.5   120.1   182.8
400          RY   964.0   962.0   960.0   958.0   958.0   960.0   960.0   960.0
             *

401          KK  SUB-61   BASIN
402          BA   0.142
403          LG    0.30    0.15    7.60    0.10      12
404          UC   0.408   0.545
405          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
406          UA     100
             *

407          KK     C61
408          KM   COMBINE R60, AND SUB-61
409          HC       2
             *

410          KK     R61   ROUTE   REACH
411          RS       1    FLOW      -1
412          RC   0.053   0.045   0.053     780  0.0103  950.00
413          RX     0.0     7.4    14.6    36.2    47.1    62.9    69.6    76.4
414          RY   950.0   948.0   946.0   946.0   946.0   946.0   948.0   950.0
             *
```

```
415          KK  SUB-62   BASIN
416          BA   0.098
417          LG    0.26    0.15    7.60    0.10      20
418          UC   0.296   0.322
419          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
420          UA     100
             *
```



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

421          KK  SUB-63   BASIN
422          BA   0.082
423          LG    0.27    0.15    8.00    0.08      16
424          UC   0.288   0.345
425          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
426          UA     100
             *

427          KK  HYDRO2
428          BA   0.001
429          QI       0       0       0       0       0       0       0       0       0       0
430          QI       0       0       0       0       0       0       0       0       0       0
431          QI       0       0       0       0       0       0       0       0       0       0
432          QI       0       0       0       0       0       0       0       0       0       0
433          QI       0       0       0       0       0       0       0       0       0       0
434          QI       0       0       0       0       0       0       0       0       0       0
435          QI       0       0       0       0       0       0       0       0       0       0
436          QI       0       0       0       0       0       0       0       0       0       0
437          QI       0       0       0       0       0       0       0       0       0       0
438          QI       0       0       0       0       0       0       0       0       0       0
439          QI       0       0       0       0       0       0       0       0       0       0
440          QI       0       0       0       0       0       0       0    0.06    0.21    4.92
441          QI   15.82   42.09    68.3   70.34   82.67  198.46  208.82  193.16  164.98  143.11
442          QI  117.68  107.17   99.98   91.35   87.97   83.27   80.93   76.24   74.23   70.99
443          QI   67.18   63.35   60.23    55.6   37.08    34.4   30.86   27.52   25.07   23.88
444          QI   21.83   19.98   18.41   16.76   15.18   13.65   12.63   11.77   10.72    9.53
445          QI    8.73    8.01    7.35     6.7    6.45    5.83    5.52    5.36     5.1    4.86
446          QI    4.44    4.07     3.9    3.73    3.42    3.17    3.03    2.93    2.79     2.6
447          QI    2.38    2.18    2.12    1.66    1.33    1.44    1.23    1.45     1.4    1.28
448          QI    1.15    1.12    1.02    0.94    0.89    0.82    0.76    0.71    0.67    0.62
449          QI    0.58    0.55    0.55    0.53    0.49    0.48    0.47    0.39    0.37    0.42
450          QI    0.39    0.34    0.33    0.32    0.31     0.3    0.29    0.29    0.28    0.28
451          QI    0.27    0.26    0.25    0.23    0.23    0.22    0.21     0.2    0.19    0.19
452          QI    0.18    0.17    0.16    0.15    0.15    0.14    0.13    0.13    0.12    0.04
453          QI    0.01
             *

454          KK  HYDRO3
455          BA   0.001
456          QI       0       0       0       0       0       0       0       0       0       0
457          QI       0       0       0       0       0       0       0       0       0       0
458          QI       0       0       0       0       0       0       0       0       0       0
459          QI       0       0       0       0       0       0       0       0       0       0
460          QI       0       0       0       0       0       0       0       0       0       0
461          QI       0       0       0       0       0       0       0       0       0       0
462          QI       0       0       0       0       0       0       0       0       0       0
463          QI       0       0       0       0       0       0       0       0       0       0
464          QI       0       0       0       0       0       0       0       0       0       0
465          QI       0       0       0       0       0       0       0       0       0       0
466          QI       0       0       0       0       0       0       0       0       0       0
467          QI       0       0       0       0       0       0       0       0    1.96    6.05
468          QI    8.11    2.58    3.37   15.16  223.84  553.48  557.89  484.36  405.52  337.86
469          QI  289.58  244.22  200.76  162.35  123.39   96.28   70.95   48.75   36.47   26.05
470          QI   18.93   13.62     9.5    6.39    3.99    2.65     1.3    0.78    0.57    0.37
```



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

471          QI     0.3    0.23    0.17    0.12    0.08    0.05    0.02       0       0       0
472          QI       0       0       0       0       0       0       0       0       0       0
473          QI       0       0       0       0       0       0       0       0       0       0
474          QI       0       0       0       0       0       0       0       0       0       0
475          QI       0       0       0       0       0       0       0       0       0       0
476          QI       0       0       0       0       0       0       0       0       0       0
477          QI       0       0       0       0       0       0       0       0       0       0
478          QI       0       0       0       0       0       0       0       0       0       0
479          QI       0       0       0       0       0       0       0       0       0       0
480          QI       0
             *

481          KK     C63
482          KM   COMBINE R61, SUB-62, SUB-63, HYDRO2, AND HYDRO3
483          HC       5
             *

484          KK     R63   ROUTE   REACH
485          RS       2    FLOW      -1
486          RC   0.053   0.045   0.053    2145  0.0196  922.00
487          RX     0.0     4.2     8.2    12.2    36.3    41.2    45.8    50.4
488          RY   922.0   920.0   918.0   916.0   916.0   918.0   920.0   922.0
```

```
                    *
489                 KK  SUB-64   BASIN
490                 BA   0.071
491                 LG    0.30    0.15    7.30    0.10       5
492                 UC   0.296   0.365
493                 UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
494                 UA     100
                    *

495                 KK     C64
496                 KM   COMBINE R63, AND SUB-64
497                 HC       2
                    *
498                 ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    43      SUB14B
                 .
                 .
    49           .      SUB14C
                 .           .
                 .           .
    55        C14C............
                 V
                 V
    58        R14C
                 .
                 .
    63           .      SUB14A
                 .           .
                 .           .
    69        C14A............
                 .
                 .
    72           .      SUB19A
                 .           .
                 .           .
    78           .           .      SUB19B
                 .           .           .
                 .           .           .
    84           .           .           .      SUB19C
                 .           .           .           .
                 .           .           .           .
    90        C19C.......................................
                 V
                 V
    93        R19C
                 .
                 .
    98           .      SUB-13
                 .           .
                 .           .
   104         C13............
                 .
                 .
   107           .      SUB-18
                 .           .
                 .           .
   113         C18............
                 V
                 V
   116         R18
                 .
                 .
   121           .      SUB12A
                 .           .
                 .           .
   127        C12A............
                 .
                 .
   130           .      SUB33E
                 .           .
                 .           .
   136           .           .      SUB33F
                 .           .           V
                 .           .           V
   142           .           .        R33F
                 .           .           .
                 .           .           .
   147           .        C33F............
                 .           .
                 .           .
   150           .           .      SUB33D
                 .           .           .
                 .           .           .
   156           .        C33D............
```

```
                 V
                 V
159            R33D
                 .
                 .
164              .        SUB33B
                 .           .
                 .           .
170            C33B............
                 .
                 .
173              .        SUB33C
                 .           .
                 .           .
179            C33C............
                 V
                 V
182            R33C
                 .
                 .
187              .        SUB33A
                 .           .
                 .           .
193            C33A............
                 .
                 .
196              .        SUB46A
                 .           .
                 .           .
202              .           .        SUB46B
                 .           .            V
                 .           .            V
208              .           .          R46B
                 .           .            .
                 .           .            .
213              .         C46............
                 .           .
                 .           .
216              .           .        SUB-45
                 .           .            .
                 .           .            .
222              .         C45............
                 .           V
                 .           V
225              .         R45
                 .           .
                 .           .
230              .           .        SUB-47
                 .           .            .
                 .           .            .
236              .         C47............
                 .           .
                 .           .
239              .           .        SUB-75
                 .           .            .
                 .           .            .
245              .           .            .        SUB-76
                 .           .            .           .
                 .           .            .           .
251              .           .          C76............
                 .           .            V
                 .           .            V
254              .           .          R76
                 .           .            .
                 .           .            .
259              .           .            .        SUB-73
                 .           .            .           .
                 .           .            .           .
265              .           .          C73............
                 .           .            .
                 .           .            .
268              .           .            .        SUB-74
                 .           .            .           .
                 .           .            .           .
274              .           .          C74............
                 .           .            V
                 .           .            V
277              .           .          R74
                 .           .            .
                 .           .            .
282              .           .            .        SUB-71
                 .           .            .           .
                 .           .            .           .
288              .           .          C71............
                 .           .            .
                 .           .            .
291              .           .            .        SUB-70
                 .           .            .            V
                 .           .            .            V
297              .           .            .          R70
                 .           .            .           .
                 .           .            .           .
```

```
302                                                  SUB-72
                                                       .
308                                            C70.........
                                                       .
311                                     C72.........
                                         V
                                         V
314                                     R72
                                                       .
319                                            SUB-69
                                                       .
                                                       .
326                                                  HYDRO6
                                                       .
                                                       .
353                                     C69.......................
                                                       .
356                                            SUB-57
                                                       .
                                                       .
362                                     C57.........
                                         V
                                         V
365                                     R69
                                                       .
370                                            SUB-58
                                                    V
                                                    V
376                                            R58
                                                       .
                                                       .
381                                                  SUB-59
                                                       .
                                                       .
387                                                                SUB-60
                                                       .           .
                                                       .           .
393                                     C60.................................
                                         V
                                         V
396                                     R60
                                                       .
                                                       .
401                                            SUB-61
                                                       .
                                                       .
407                                     C61.........
                                         V
                                         V
410                                     R61
                                                       .
                                                       .
415                                            SUB-62
                                                       .
                                                       .
421                                                  SUB-63
                                                       .
                                                       .
427                                                                HYDRO2
                                                       .           .
                                                       .           .
454                                                                            HYDRO3
                                                       .           .           .
                                                       .           .           .
481                                     C63.............................................
                                         V
                                         V
484                                     R63
                                                       .
                                                       .
489                                            SUB-64
                                                       .
                                                       .
495                                     C64.........
```

1

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

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

+		SUB14B	475.	12.20	59.	15.	5.	.27
+	HYDROGRAPH AT	SUB14C	942.	12.17	104.	27.	10.	.46
+	2 COMBINED AT	C14C	1400.	12.17	162.	42.	15.	.73
+	ROUTED TO	R14C	1352.	12.27	162.	42.	15.	.73
+	HYDROGRAPH AT	SUB14A	403.	12.13	43.	11.	4.	.18
+	2 COMBINED AT	C14A	1645.	12.23	203.	53.	19.	.91
+	HYDROGRAPH AT	SUB19A	246.	12.13	28.	8.	3.	.11
+	HYDROGRAPH AT	SUB19B	533.	12.13	62.	18.	7.	.26
+	HYDROGRAPH AT	SUB19C	235.	12.10	27.	8.	3.	.10
+	4 COMBINED AT	C19C	2508.	12.17	317.	86.	31.	1.38
+	ROUTED TO	R19C	2416.	12.30	317.	86.	31.	1.38
+	HYDROGRAPH AT	SUB-13	1239.	12.13	97.	26.	9.	.54
+	2 COMBINED AT	C13	3055.	12.23	411.	111.	40.	1.92
+	HYDROGRAPH AT	SUB-18	823.	12.17	97.	29.	10.	.38
+	2 COMBINED AT	C18	3811.	12.20	505.	139.	50.	2.30
+	ROUTED TO	R18	3744.	12.23	505.	139.	50.	2.30
+	HYDROGRAPH AT	SUB12A	198.	12.10	21.	6.	2.	.09
+	2 COMBINED AT	C12A	3878.	12.23	525.	145.	52.	2.39
+	HYDROGRAPH AT	SUB33E	462.	12.10	48.	14.	5.	.19
+	HYDROGRAPH AT	SUB33F	50.	12.07	5.	1.	0.	.02
+	ROUTED TO	R33F	49.	12.10	5.	1.	0.	.02
+	2 COMBINED AT	C33F	510.	12.10	52.	15.	5.	.22
+	HYDROGRAPH AT	SUB33D	45.	12.23	7.	2.	1.	.04
+	2 COMBINED AT	C33D	543.	12.10	58.	17.	6.	.25
+	ROUTED TO	R33D	531.	12.17	58.	17.	6.	.25
+	HYDROGRAPH AT	SUB33B	349.	12.13	35.	9.	3.	.16
+	2 COMBINED AT	C33B	857.	12.13	93.	26.	9.	.41
+	HYDROGRAPH AT	SUB33C	63.	12.10	8.	2.	1.	.03
+	2 COMBINED AT	C33C	917.	12.13	100.	28.	10.	.43
+	ROUTED TO	R33C	908.	12.17	100.	28.	10.	.43
+	HYDROGRAPH AT	SUB33A	152.	12.07	13.	3.	1.	.05

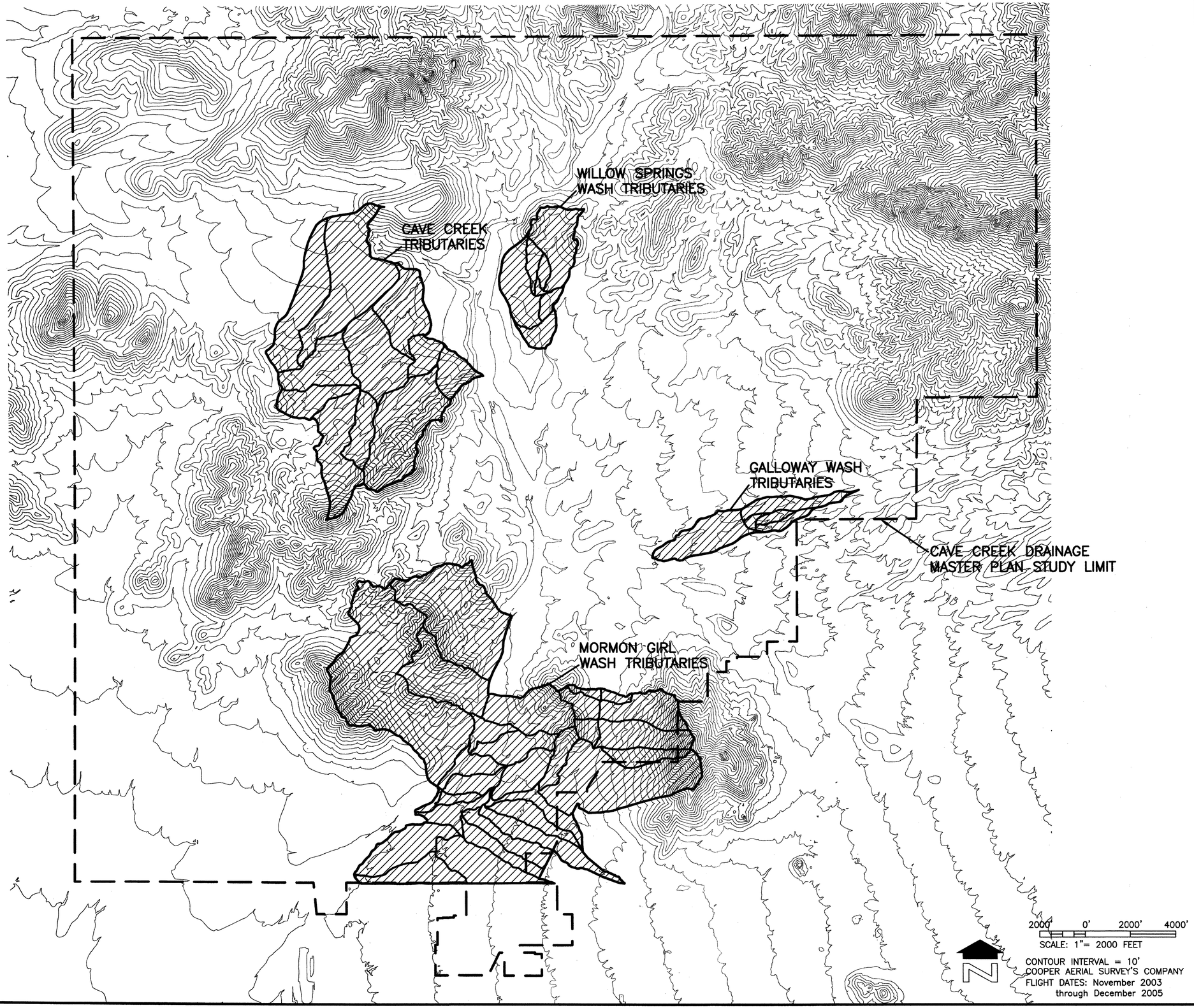
2 COMBINED AT	C33A	993.	12.17	112.	31.	11.	.49
+ HYDROGRAPH AT	SUB46A	71.	12.10	7.	2.	1.	.03
+ HYDROGRAPH AT	SUB46B	61.	12.10	7.	2.	1.	.03
+ ROUTED TO	R46B	61.	12.13	7.	2.	1.	.03
+ 2 COMBINED AT	C46	129.	12.10	14.	4.	1.	.06
+ HYDROGRAPH AT	SUB-45	153.	12.17	24.	6.	2.	.09
+ 2 COMBINED AT	C45	274.	12.13	38.	10.	3.	.15
+ ROUTED TO	R45	256.	12.37	38.	10.	3.	.15
+ HYDROGRAPH AT	SUB-47	325.	12.17	32.	8.	3.	.18
+ 2 COMBINED AT	C47	487.	12.27	69.	18.	6.	.33
+ HYDROGRAPH AT	SUB-75	38.	12.07	4.	1.	0.	.02
+ HYDROGRAPH AT	SUB-76	46.	12.07	4.	1.	0.	.02
+ 2 COMBINED AT	C76	84.	12.07	8.	3.	1.	.04
+ ROUTED TO	R76	81.	12.10	8.	3.	1.	.04
+ HYDROGRAPH AT	SUB-73	136.	12.10	15.	5.	2.	.06
+ 2 COMBINED AT	C73	216.	12.10	23.	7.	3.	.09
+ HYDROGRAPH AT	SUB-74	354.	12.10	39.	12.	4.	.16
+ 2 COMBINED AT	C74	566.	12.10	61.	19.	7.	.25
+ ROUTED TO	R74	550.	12.13	61.	19.	7.	.25
+ HYDROGRAPH AT	SUB-71	87.	12.07	9.	3.	1.	.04
+ 2 COMBINED AT	C71	625.	12.13	70.	21.	8.	.28
+ HYDROGRAPH AT	SUB-70	143.	12.13	17.	5.	2.	.07
+ ROUTED TO	R70	142.	12.13	17.	5.	2.	.07
+ HYDROGRAPH AT	SUB-72	347.	12.13	37.	11.	4.	.16
+ 2 COMBINED AT	C70	486.	12.13	54.	16.	6.	.23
+ 2 COMBINED AT	C72	1103.	12.13	123.	37.	13.	.51
+ ROUTED TO	R72	1051.	12.23	123.	37.	13.	.51
+ HYDROGRAPH AT	SUB-69	977.	12.17	101.	29.	11.	.47
+ HYDROGRAPH AT	HYDRO6	1236.	12.40	273.	73.	26.	.00
+ 3 COMBINED AT	C69	2950.	12.20	491.	138.	50.	.98
+ HYDROGRAPH AT	SUB-57	170.	12.07	14.	4.	1.	.07

+	2 COMBINED AT	C57	3036.	12.20	504.	142.	51.	1.05
+	ROUTED TO	R69	2967.	12.27	504.	142.	51.	1.05
+	HYDROGRAPH AT	SUB-58	249.	12.10	20.	5.	2.	.11
+	ROUTED TO	R58	244.	12.13	20.	5.	2.	.11
+	HYDROGRAPH AT	SUB-59	87.	12.27	15.	4.	1.	.08
+	HYDROGRAPH AT	SUB-60	133.	12.23	20.	5.	2.	.09
+	4 COMBINED AT	C60	3316.	12.27	556.	156.	56.	1.33
+	ROUTED TO	R60	3311.	12.27	556.	156.	56.	1.33
+	HYDROGRAPH AT	SUB-61	184.	12.27	33.	9.	3.	.14
+	2 COMBINED AT	C61	3488.	12.27	588.	164.	59.	1.47
+	ROUTED TO	R61	3470.	12.30	588.	164.	59.	1.47
+	HYDROGRAPH AT	SUB-62	176.	12.17	24.	7.	2.	.10
+	HYDROGRAPH AT	SUB-63	144.	12.17	21.	6.	2.	.08
+	HYDROGRAPH AT	HYDRO2	209.	12.60	46.	12.	4.	.00
+	HYDROGRAPH AT	HYDRO3	558.	12.60	66.	16.	6.	.00
+	5 COMBINED AT	C63	3811.	12.30	742.	204.	74.	1.66
+	ROUTED TO	R63	3809.	12.33	742.	204.	74.	1.66
+	HYDROGRAPH AT	SUB-64	119.	12.20	16.	4.	1.	.07
+	2 COMBINED AT	C64	3900.	12.33	757.	208.	75.	1.73

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

APPENDIX F MAPS

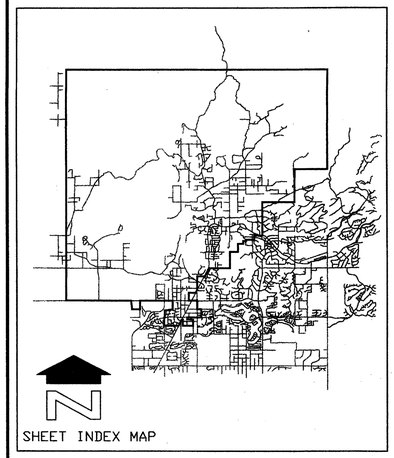
HYDROLOGIC MODELS (NEW & EXISTING)



LEGEND

DMP BOUNDARY

NEW HYDROLOGY



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

NEW HYDROLOGIC MODEL LOCATIONS

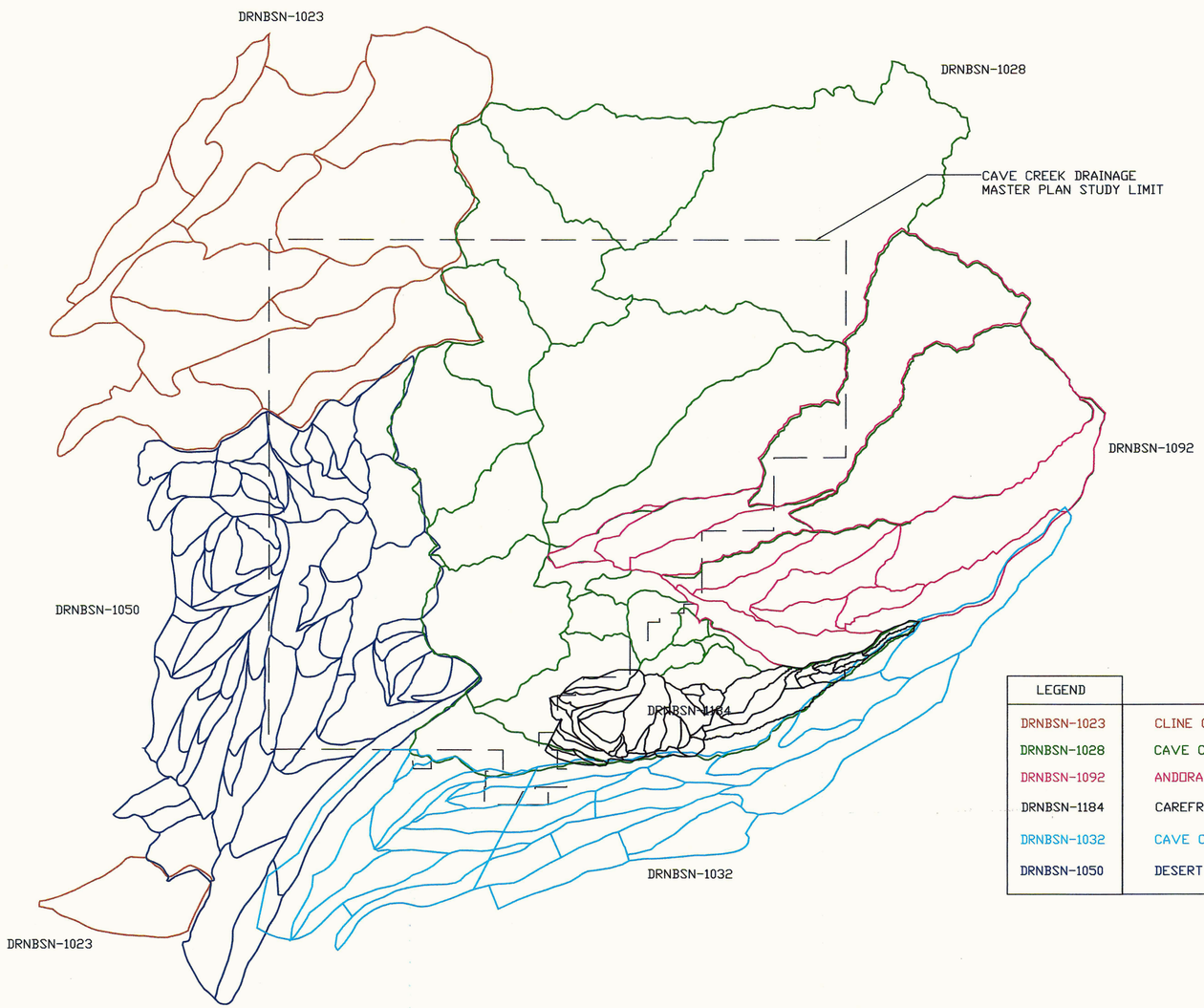
PRELIMINARY
NOT FOR
CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 1

CAVE CREEK DRAINAGE MASTER PLAN EXISTING HYDROLOGIC MODELS



LEGEND	
DRNBSN-1023	CLINE CREEK AND RODGER CREEK FDS 1990
DRNBSN-1028	CAVE CREEK FROM TONTO NATIONAL FOREST TO CAREFREE HWY FDS 1995
DRNBSN-1092	ANDORA HILLS AND GALLOWAY WASHES FDS 1999
DRNBSN-1184	CAREFREE DMP 2001
DRNBSN-1032	CAVE CREEK FDS 1996
DRNBSN-1050	DESERT HILLS AREA FDS 1997

5000' 0' 5000' 10000'

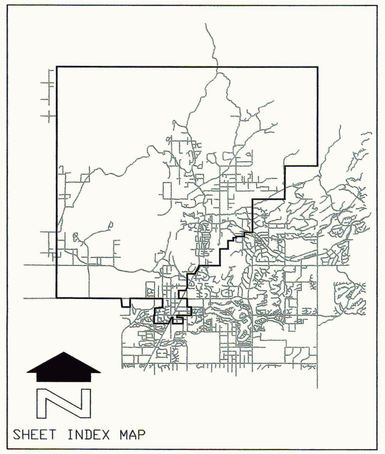
SCALE: 1"= 5000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

DMP BOUNDARY — — — —

HYDROLOGIC MODEL NAME DRNBSN-1092



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

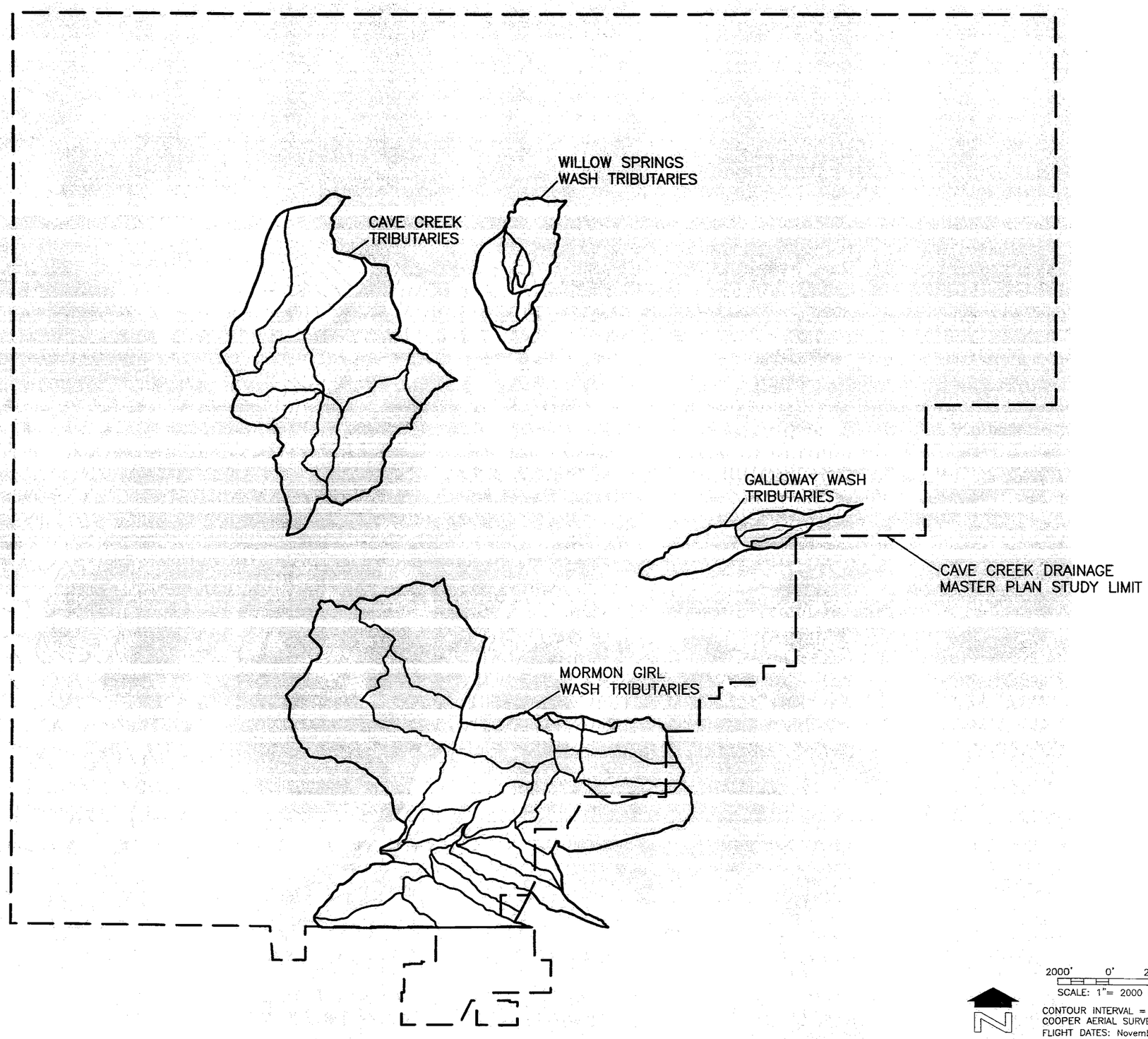
EXISTING HYDROLOGIC MODELS

PRELIMINARY NOT FOR CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 2



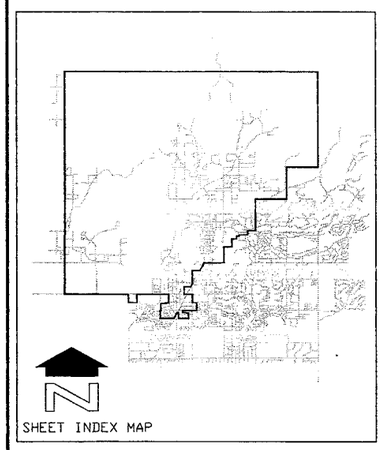
2000' 0' 2000' 4000'
SCALE: 1"= 2000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

DMP BOUNDARY

NEW HYDROLOGY



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

NEW HYDROLOGIC MODEL LOCATIONS

PRELIMINARY
NOT FOR
CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
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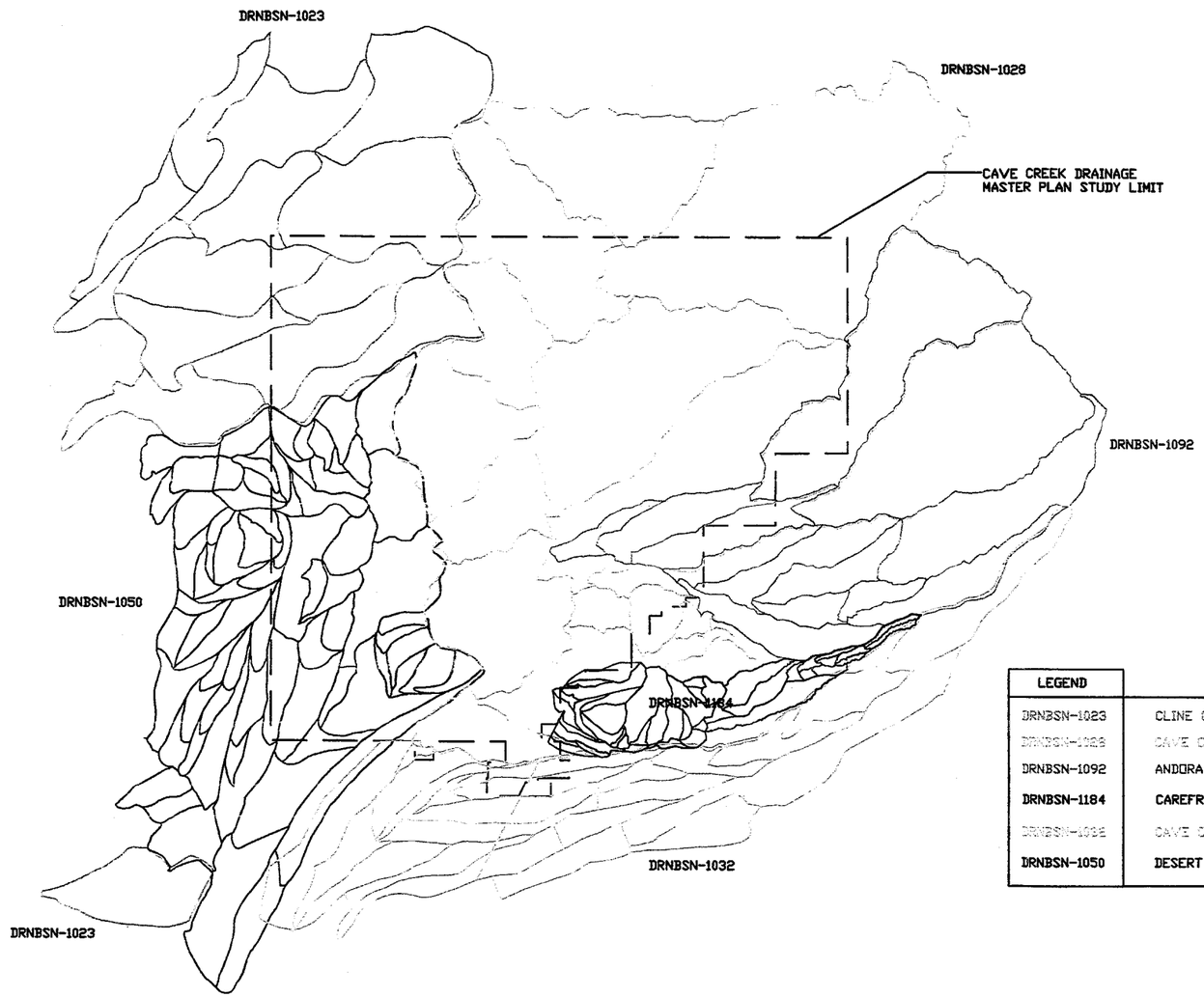
	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 1

C:\PWworking\PHX\lpotter\dms45387\Figure_01.dwg, Layout2, 7/26/2007 2:36:19 PM, lpotter

CAVE CREEK DRAINAGE MASTER PLAN EXISTING HYDROLOGIC MODELS



LEGEND	
DRNBSN-1023	CLINE CREEK AND RODGER CREEK FDS 1990
DRNBSN-1028	CAVE CREEK FROM TONTO NATIONAL FOREST TO CAREFREE HWY FDS 1995
DRNBSN-1092	ANDORA HILLS AND GALLOWAY WASHES FDS 1999
DRNBSN-1184	CAREFREE DMP 2001
DRNBSN-1032	CAVE CREEK FDS 1996
DRNBSN-1050	DESERT HILLS AREA FDS 1997

5000' 0' 5000' 10000'

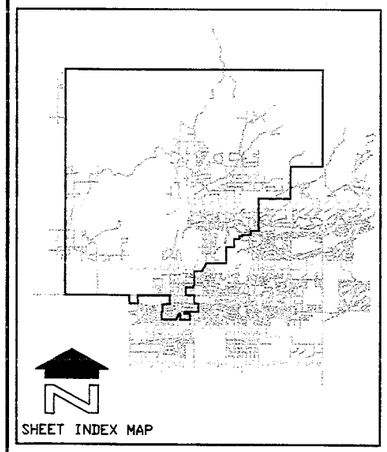
SCALE: 1"= 5000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

DMP BOUNDARY — — — —

HYDROLOGIC MODEL NAME DRNBSN-1092



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

EXISTING HYDROLOGIC MODELS

PRELIMINARY
NOT FOR
CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 2

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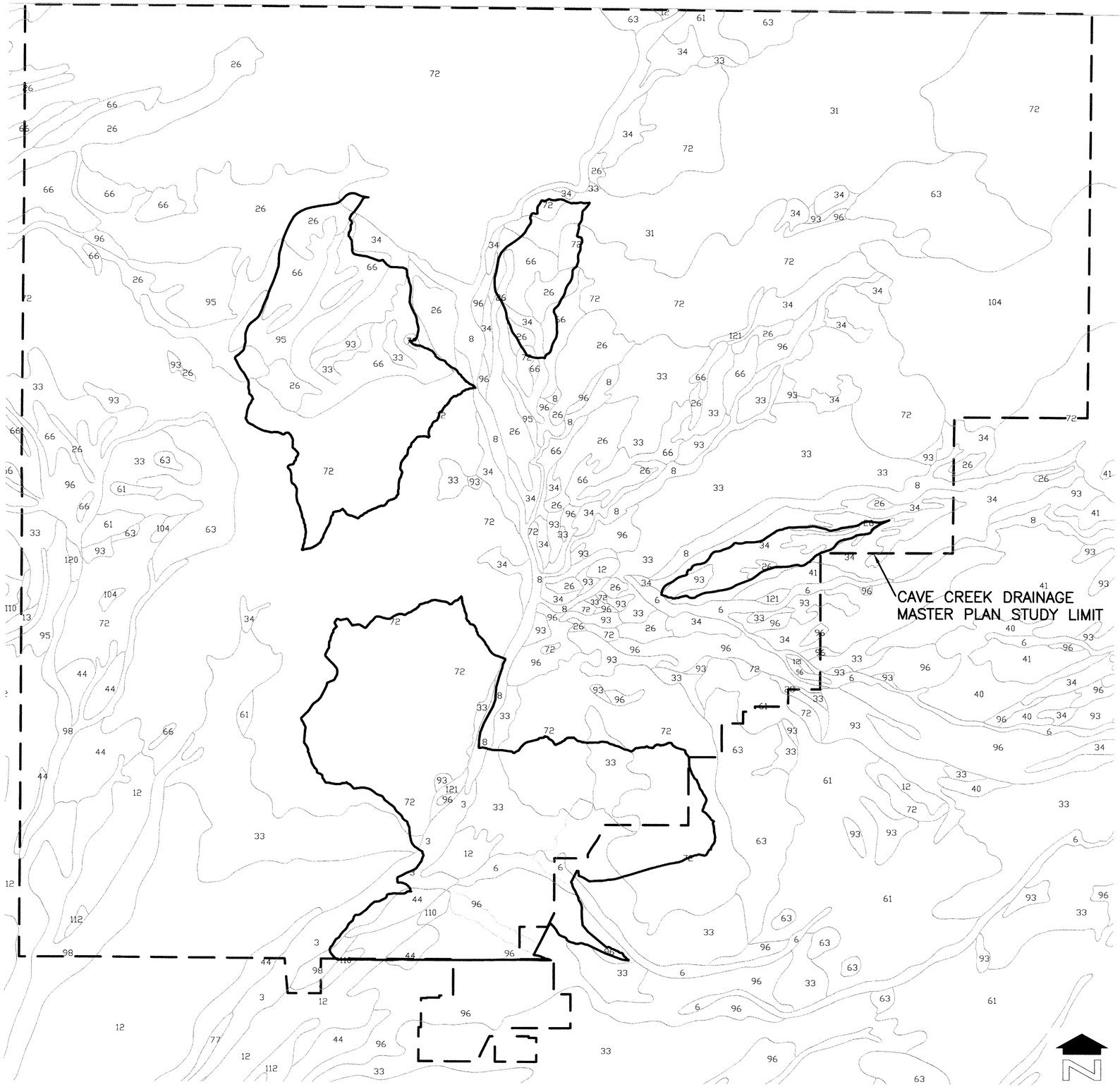
SCS SOILS MAP



SOIL TYPES

3	ANTHO–CARRIZO–MARIPO
6	ANTHONY–ARIZO
8	ARIZO
12	CAREFREE, 1–8% SLOPES
26	CONTINENTAL, 1–8% SLOPES
31	DIXALETA–ROCK 25–65% SLOPES
33	EBA, 1–8% SLOPES
34	EBA, 8–20% SLOPES
44	EBON, 1–8% SLOPES
66	GREYEAGLE–SUNCITY VARIANT
72	LEHMANS–ROCK 8–65% SLOPES
93	NICKEL–CAVE 8–30% SLOPES
95	OHACO
96	PIRAMT–TREMANT 1–10% SLOPES
98	PINALENO–TRES HERMANOS
110	SUNCITY–CIPRIANO
121	TRES HERMANOS–ANTHONY

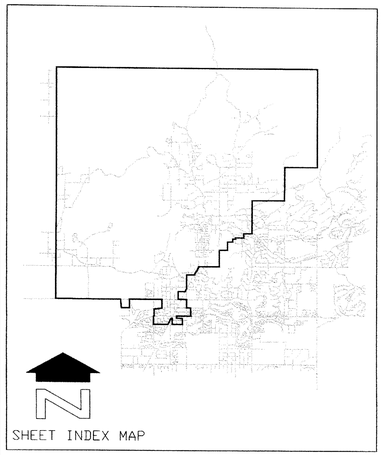
REFERENCE: USDA SCS SOIL SURVEY OF AGUILA–CARFREE AREA, 4186

DATE:

LEGEND

DMP BOUNDARY

NEW HYDROLOGY



2000' 0' 2000' 4000'

SCALE: 1"= 2000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

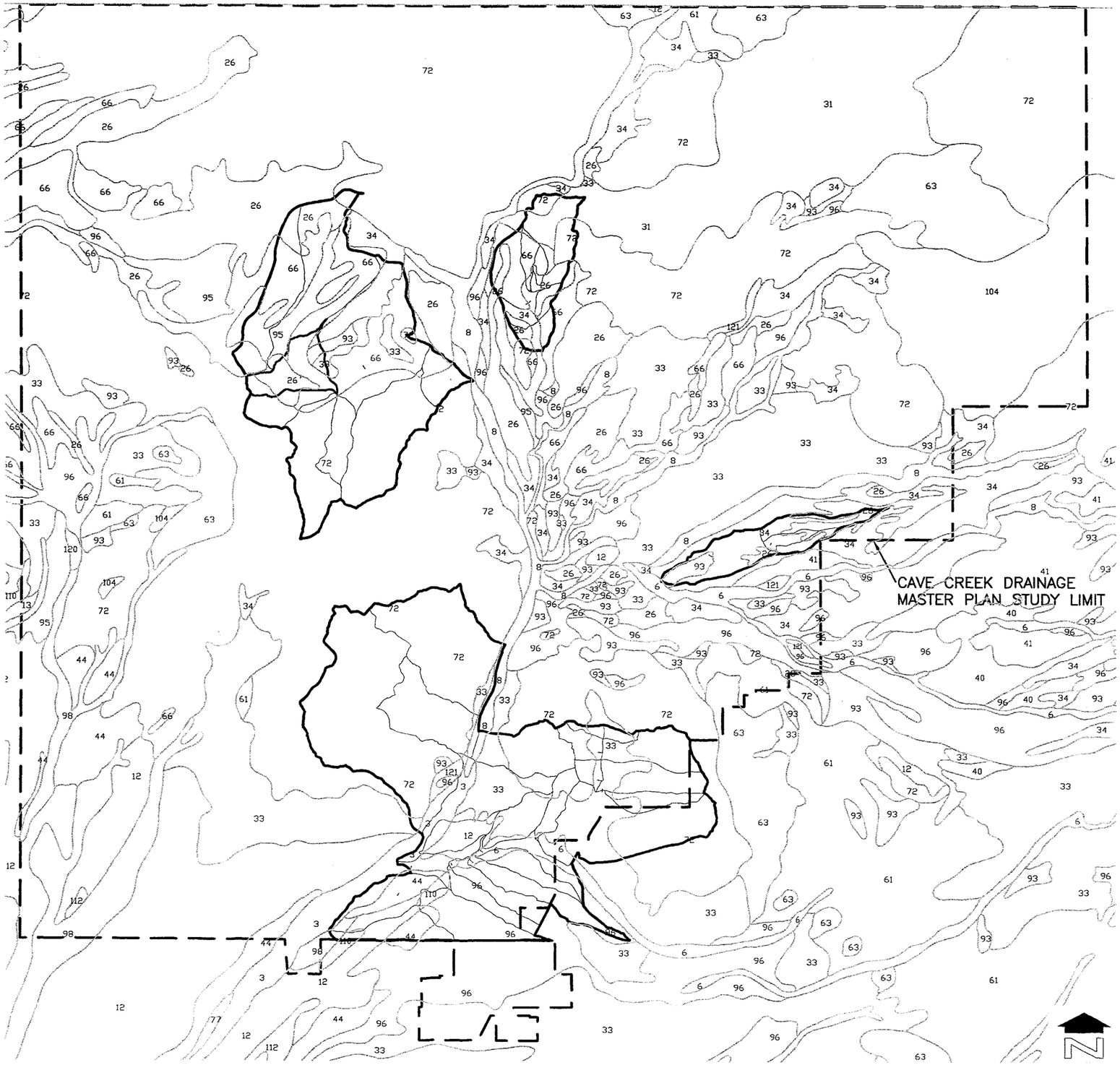
SCS SOILS MAP

PRELIMINARY NOT FOR CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 3



SOIL TYPES

3	ANTHO–CARRIZO–MARIPO
6	ANTHONY–ARIZO
8	ARIZO
12	CAREFREE, 1–8% SLOPES
26	CONTINENTAL, 1–8% SLOPES
31	DIXALETA–ROCK 25–65% SLOPES
33	EBA, 1–8% SLOPES
34	EBA, 8–20% SLOPES
44	EBON, 1–8% SLOPES
66	GREYEAGLE–SUNCITY VARIANT
72	LEHMANS–ROCK 8–65% SLOPES
93	NICKEL–CAVE 8–30% SLOPES
95	OHACO
96	PIRAMT–TREMANT 1–10% SLOPES
98	PINALENO–TRES HERMANOS
110	SUNCITY–CIPRIANO
121	TRES HERMANOS–ANTHONY

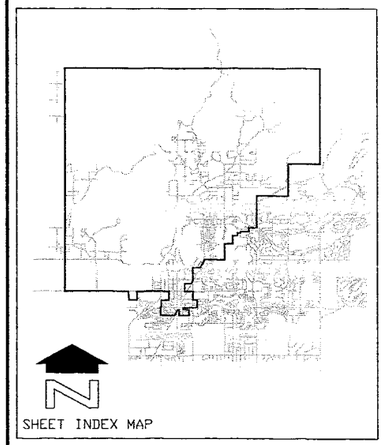
REFERENCE: USDA SCS SOIL SURVEY OF AGUILA–CARFREE AREA, 4186

DATE:

LEGEND

DMP BOUNDARY

NEW HYDROLOGY



2000' 0' 2000' 4000'

SCALE: 1"= 2000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003 through December 2005

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SCS SOILS MAP

PRELIMINARY NOT FOR CONSTRUCTION

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(602) 522-7700

	BY	DATE
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DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 3

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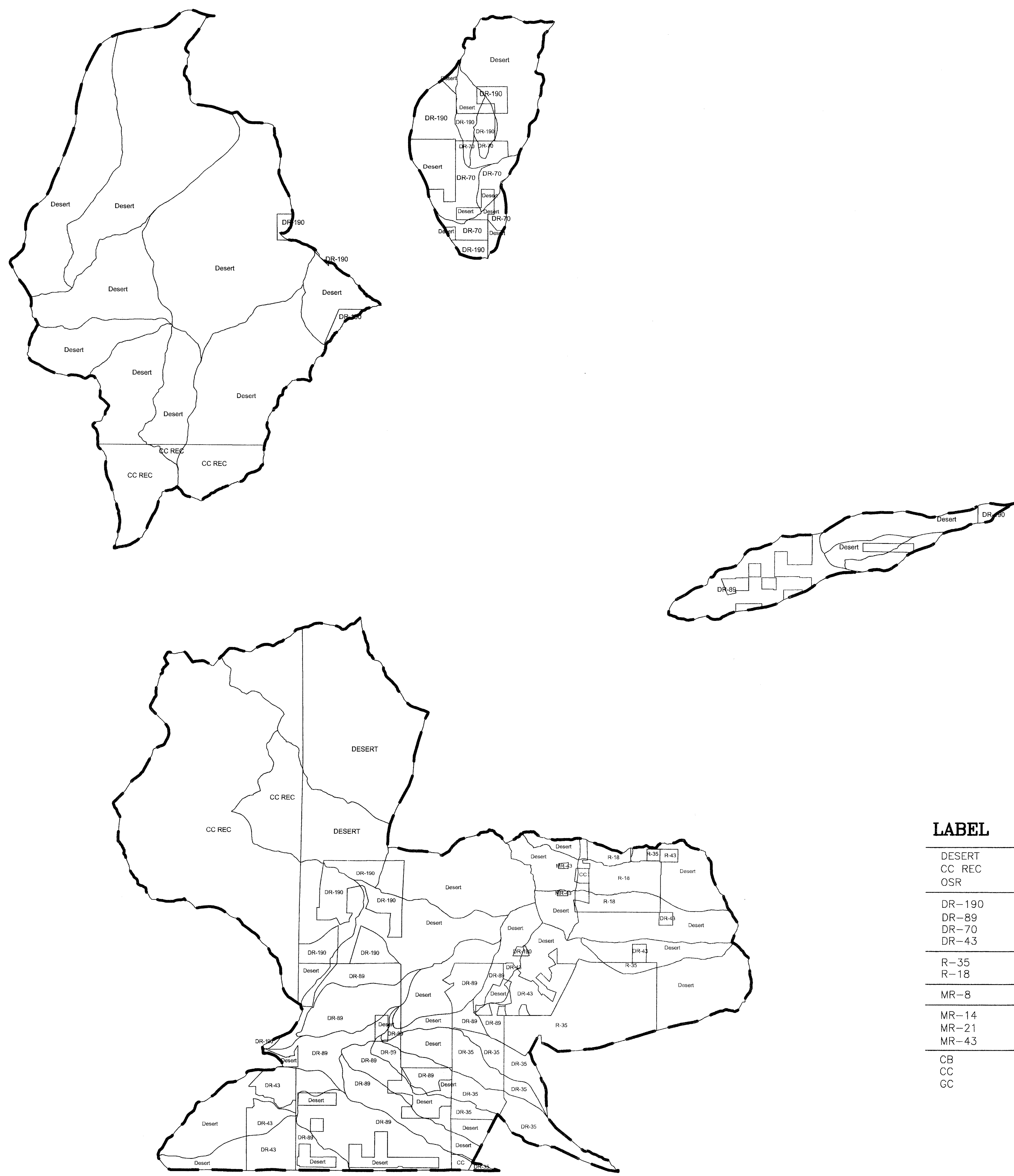
LAND USE (EXISTING AND FUTURE)



LABEL	LAND USE
DESERT CC REC OSR	OPEN SPACE DESERT
DR-190 DR-89 DR-70 DR-43	VLDR
R-35 R-18	LDR
MR-8	MDR
MR-14 MR-21 MR-43	MFR
CB CC GC	C

1500' 0' 1500' 3000'

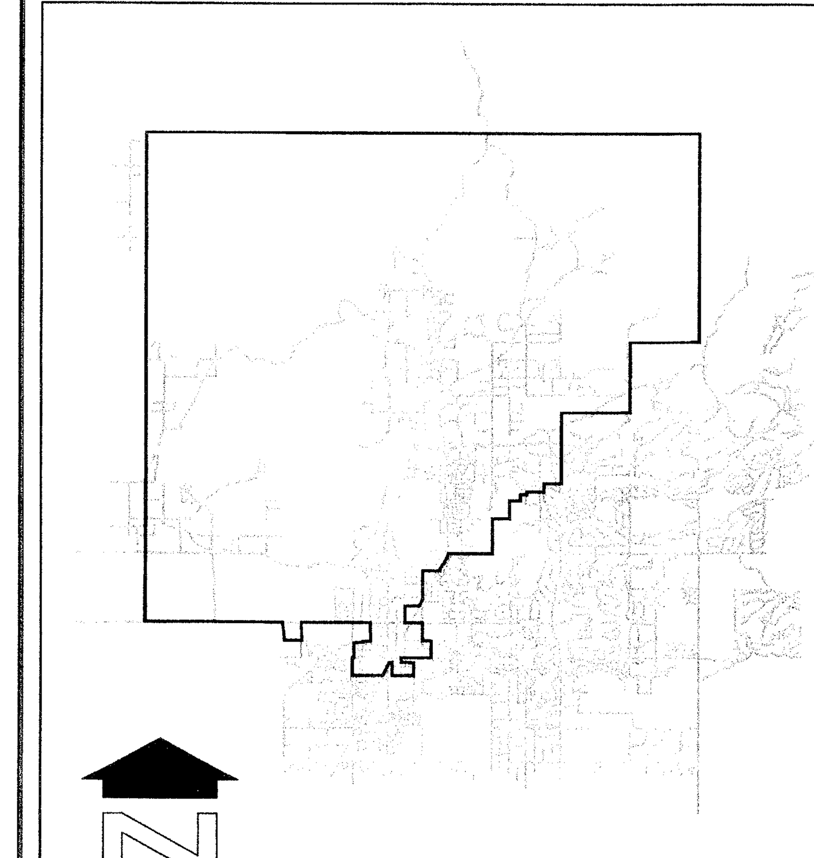
SCALE: 1"= 1500 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

NEW HYDROLOGY BOUNDARY

LAND USE CODE DR-190



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

LAND USE (EXISTING)

PRELIMINARY NOT FOR CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
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(602) 522-7700

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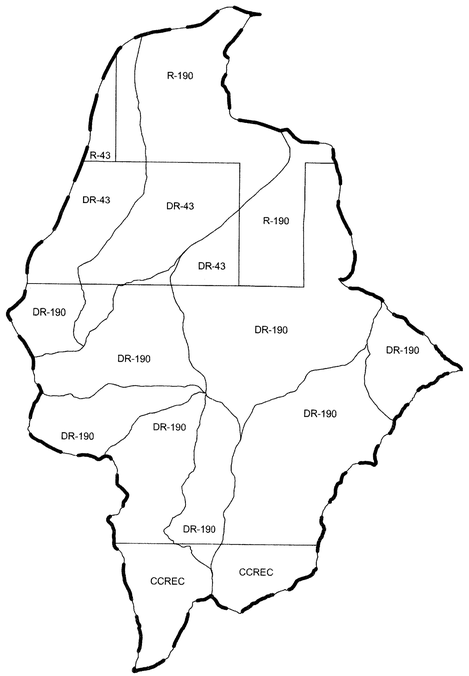
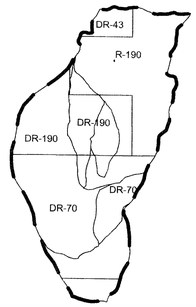
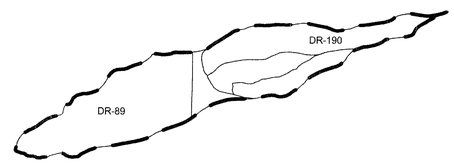
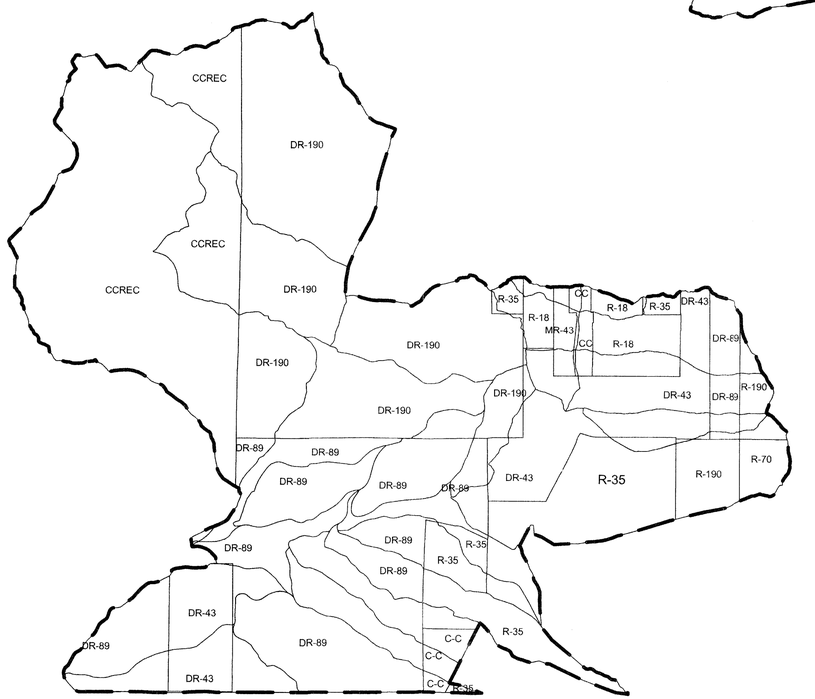
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 4









LABEL	LAND USE
DESERT CC REC OSR	OPEN SPACE DESERT
DR-190 DR-89 DR-70 DR-43	VLDR
R-35 R-18	LDR
MR-8	MDR
MR-14 MR-21 MR-43	MFR
CB CC GC	C

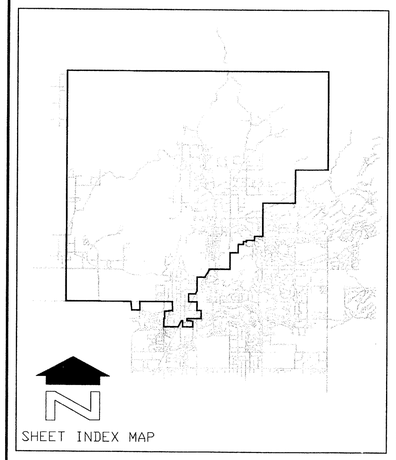
1500' 0' 1500' 3000'

SCALE: 1"= 1500 FEET

LEGEND

NEW HYDROLOGY BOUNDARY

LAND USE CODE DR-190



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

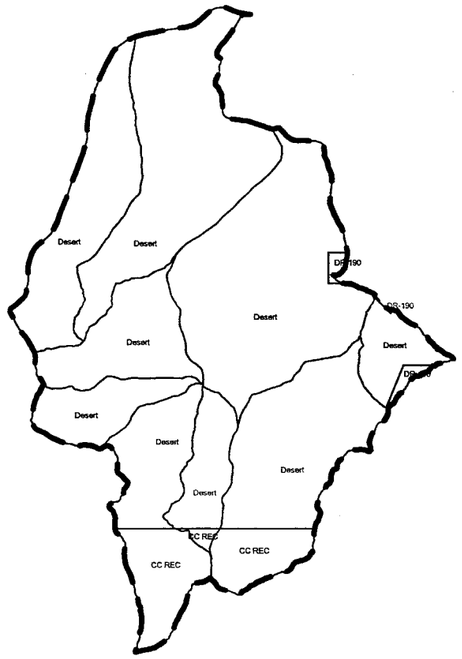
LAND USE (FUTURE)

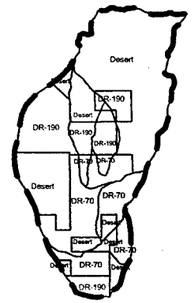
PRELIMINARY
NOT FOR
CONSTRUCTION

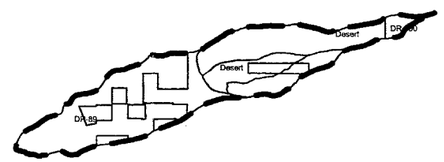
HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

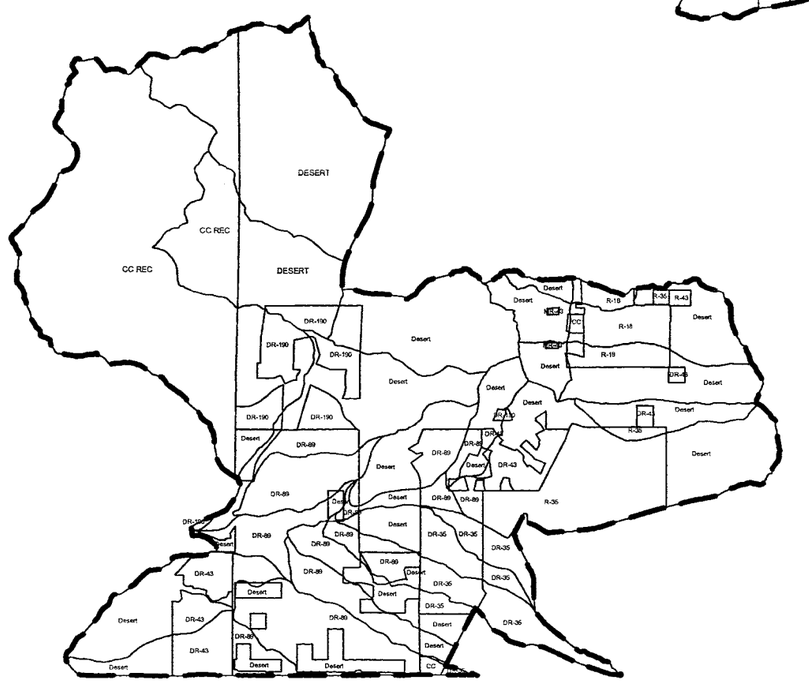
	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 5









LABEL	LAND USE
DESERT CC REC OSR	OPEN SPACE DESERT
DR-190 DR-89 DR-70 DR-43	VLDR
R-35 R-18	LDR
MR-8	MDR
MR-14 MR-21 MR-43	MFR
CB CC GC	C

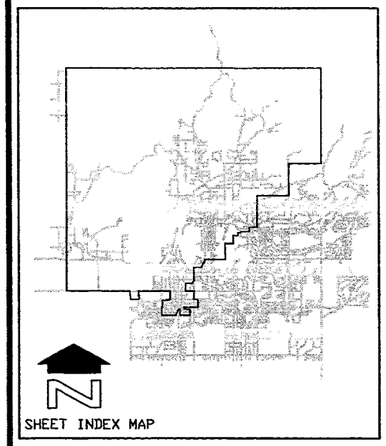
1500' 0' 1500' 3000'

SCALE: 1"= 1500 FEET
CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

NEW HYDROLOGY BOUNDARY

LAND USE CODE DR-190



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

LAND USE (EXISTING)

PRELIMINARY
NOT FOR
CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 4

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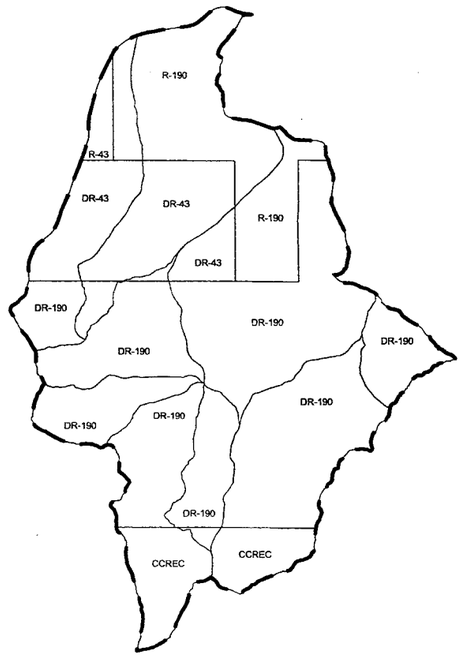
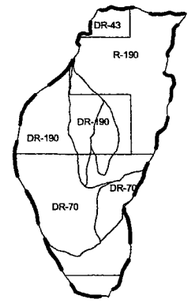
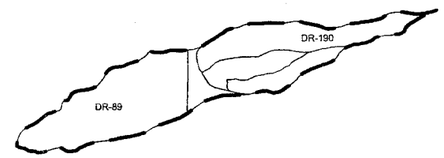
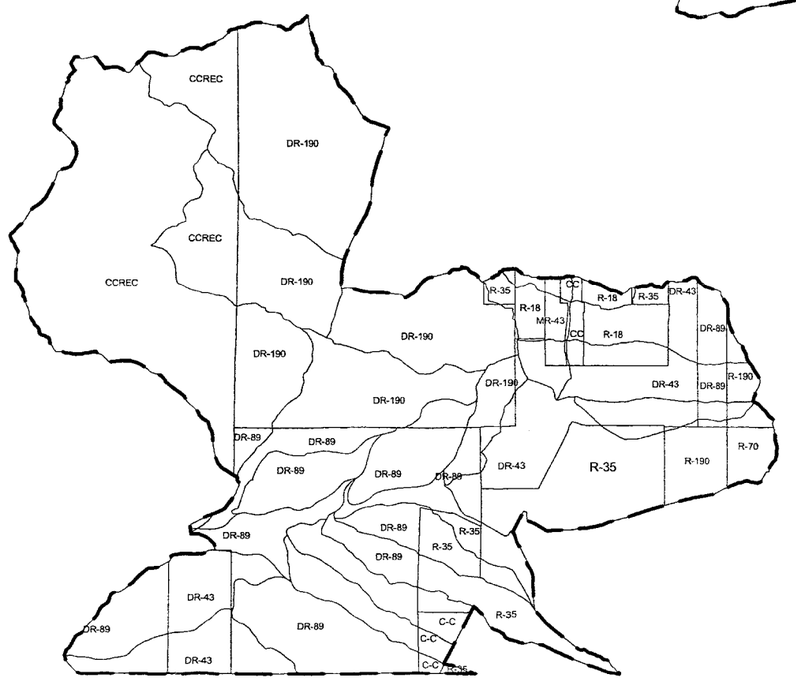








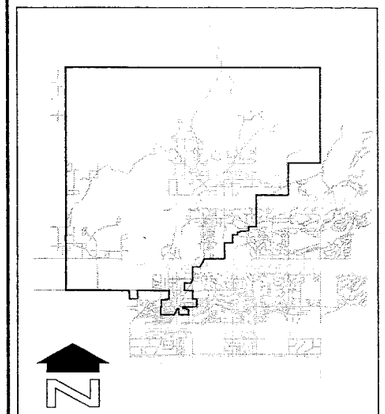
LABEL	LAND USE
DESERT CC REC OSR	OPEN SPACE DESERT
DR-190 DR-89 DR-70 DR-43	VLDR
R-35 R-18	LDR
MR-8	MDR
MR-14 MR-21 MR-43	MFR
CB CC GC	C

1500' 0' 1500' 3000'
SCALE: 1"= 1500 FEET

LEGEND

NEW HYDROLOGY BOUNDARY

LAND USE CODE DR-190



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

LAND USE (FUTURE)

PRELIMINARY NOT FOR CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 5

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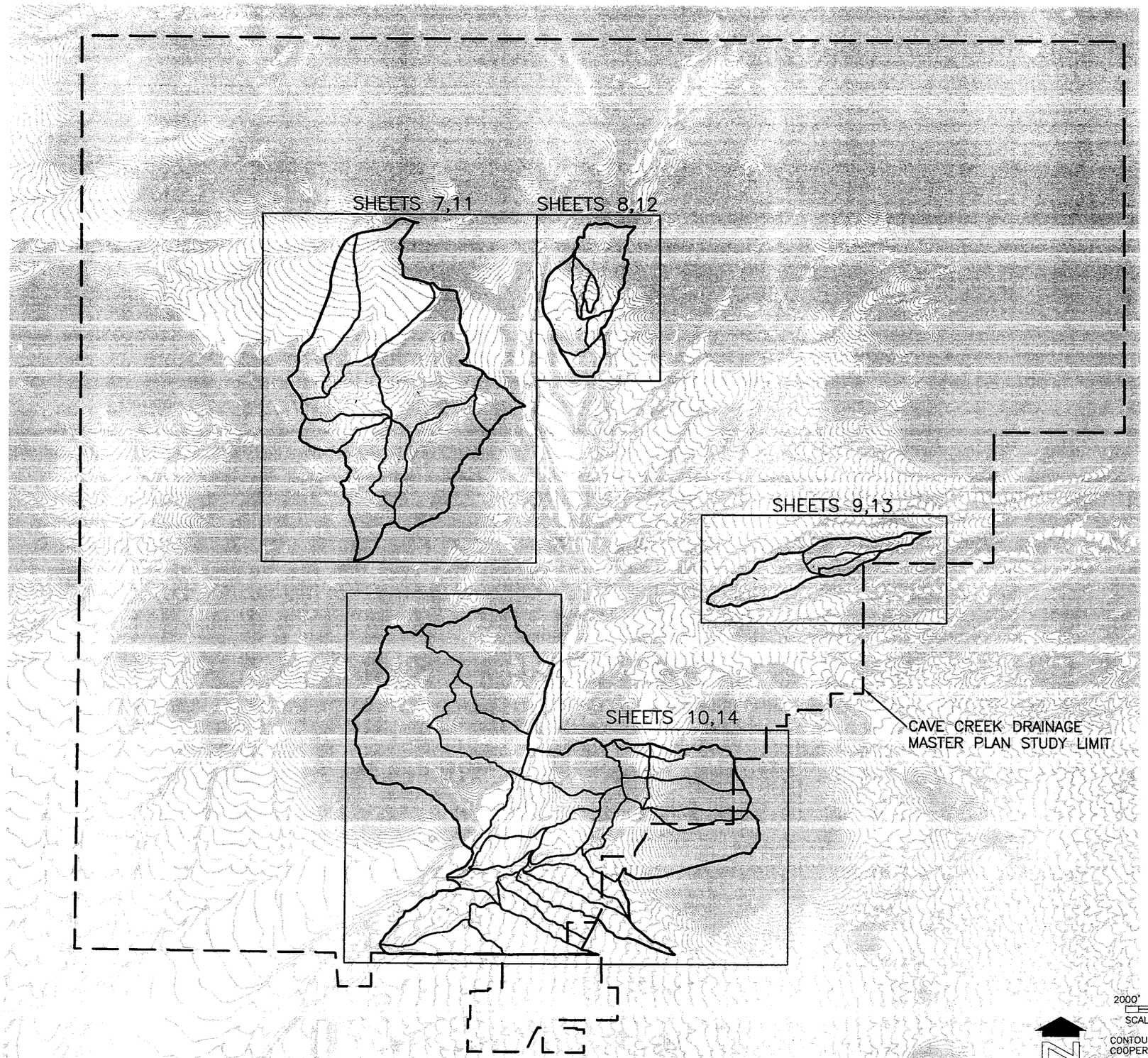
SHEET INDEX



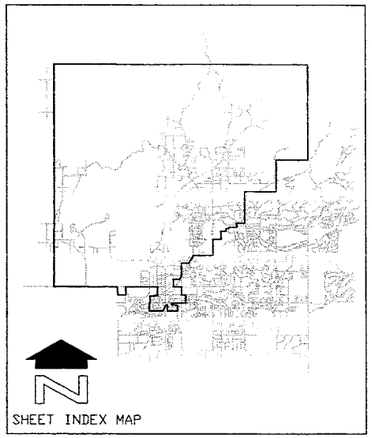
2000' 0' 2000' 4000'
SCALE: 1"= 2000 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

DMP BOUNDARY

NEW HYDROLOGY



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SHEET INDEX

PRELIMINARY
NOT FOR
CONSTRUCTION

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DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 6

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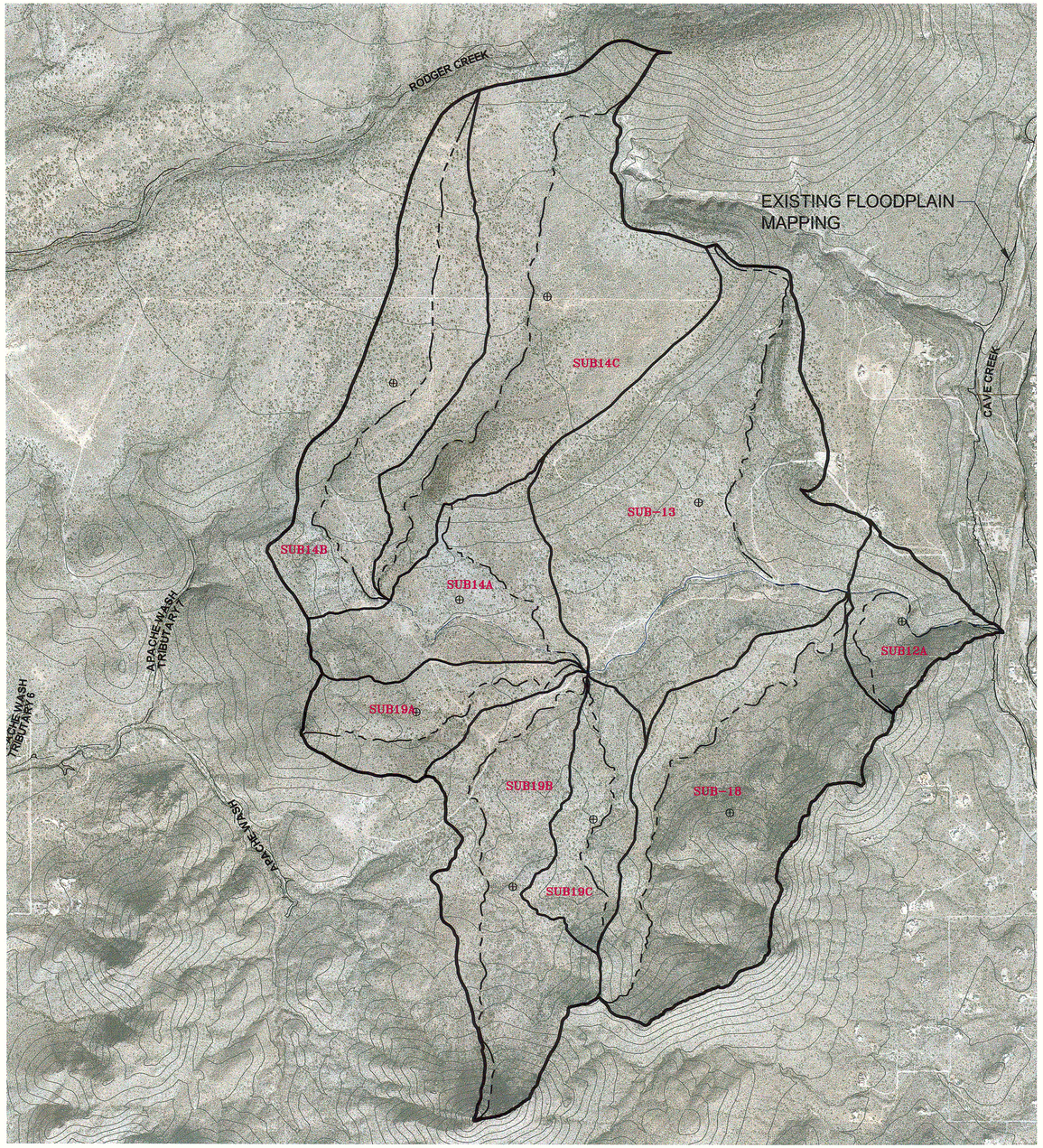
SUBBASIN IDENTIFICATION



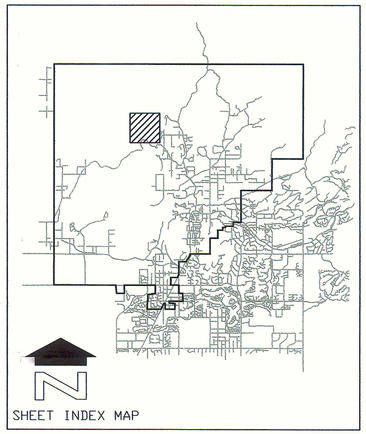
LEGEND

CENTROID

FLOWPATH

NEW HYDROLOGY

HYDROLOGIC BASIN NAME — SUB-13



800' 0' 800' 1600'

SCALE: 1"= 800 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SUB-BASIN IDENTIFICATION

PRELIMINARY NOT FOR CONSTRUCTION

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PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 7

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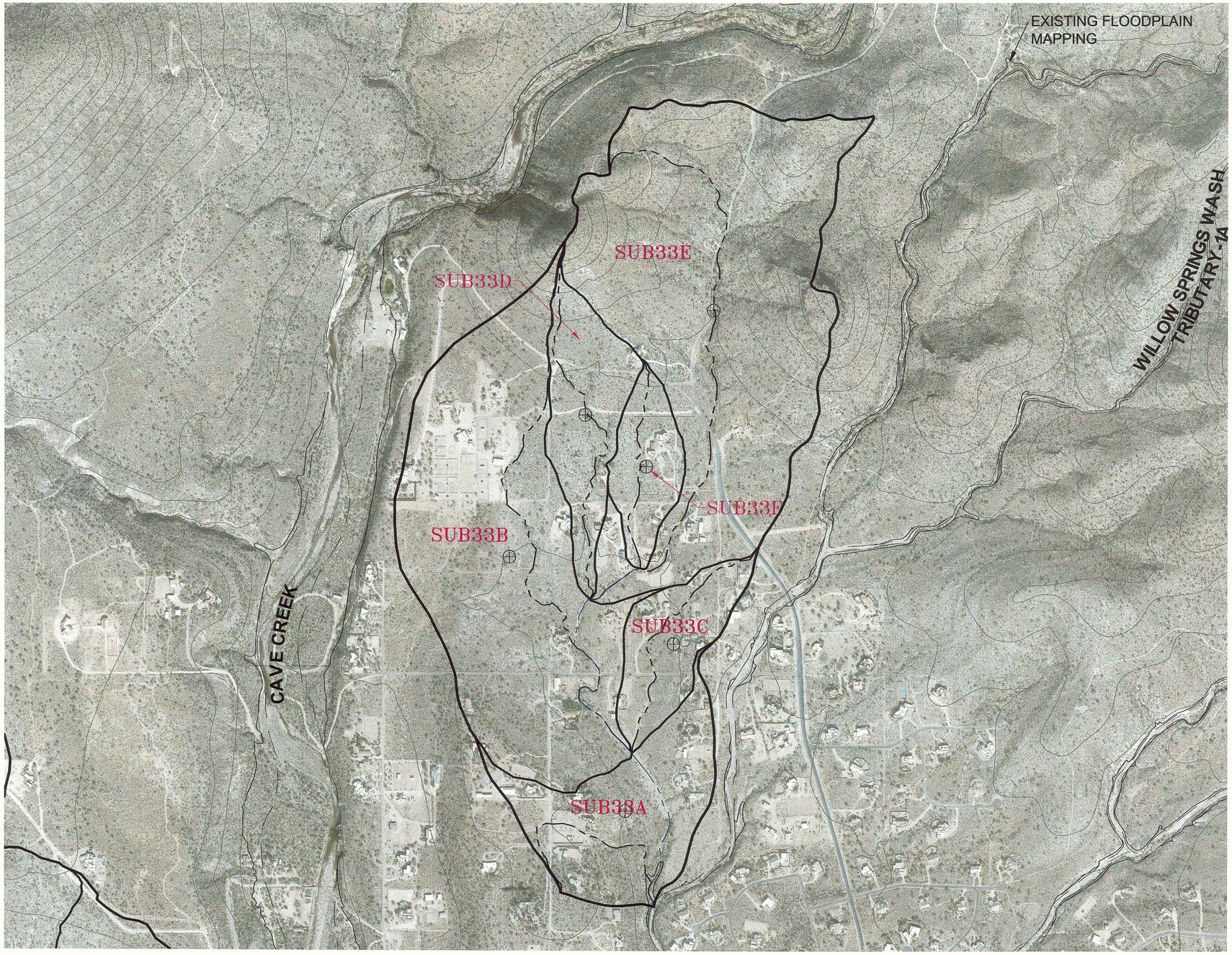


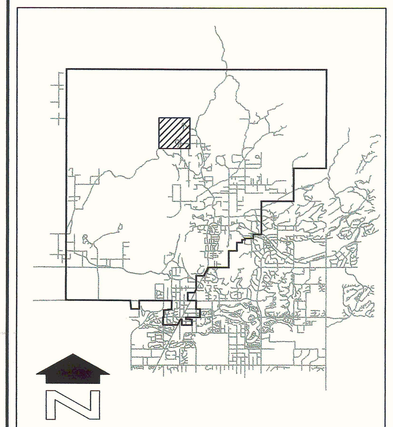
400' 0' 400' 800'

SCALE: 1"= 400 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

CENTROID	⊕
FLOWPATH	— — —
NEW HYDROLOGY	
HYDROLOGIC BASIN NAME	SUB-13



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SUB-BASIN IDENTIFICATION

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PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 8

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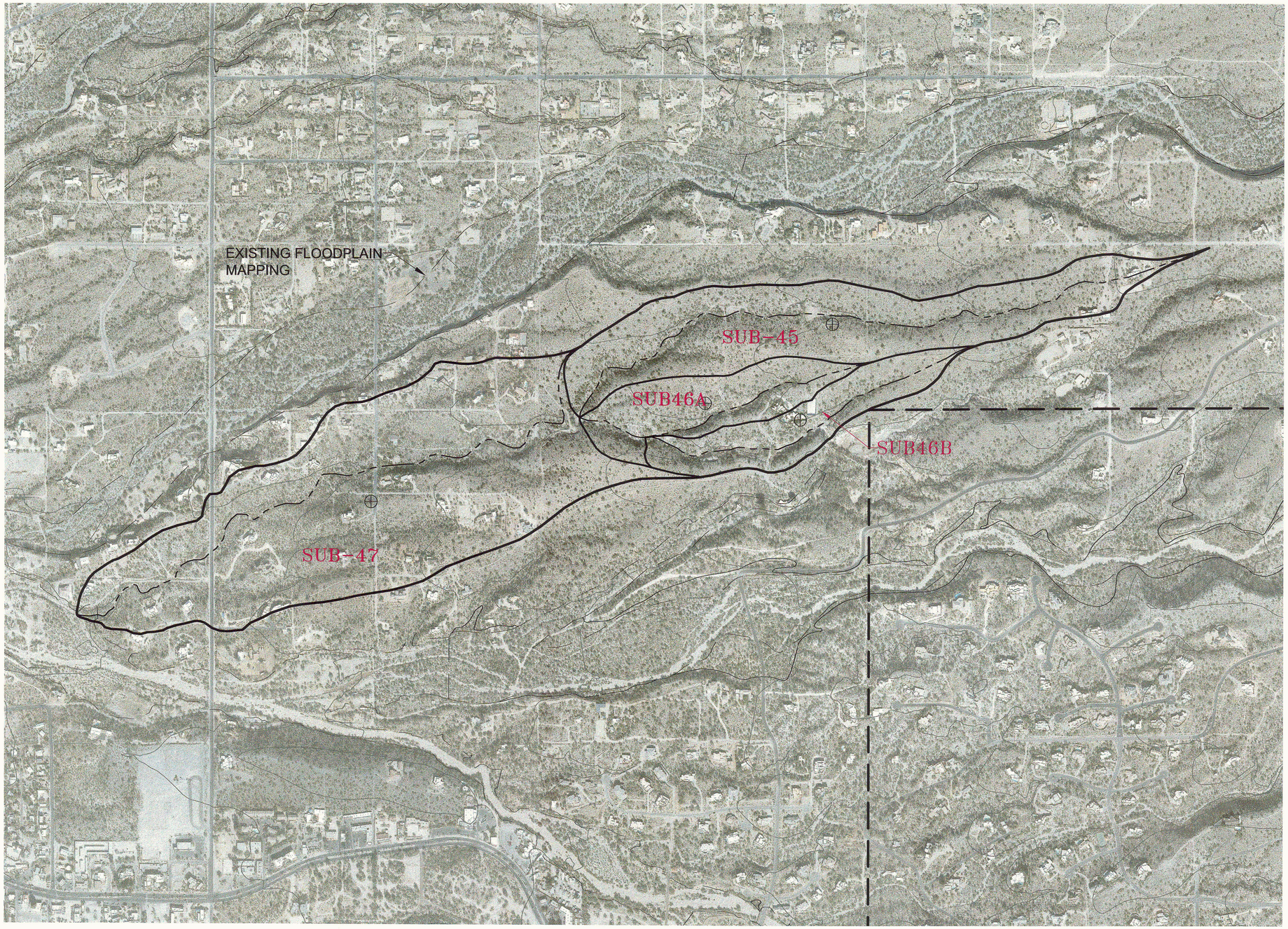


400' 0' 400' 800'
SCALE: 1"= 400 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

LEGEND

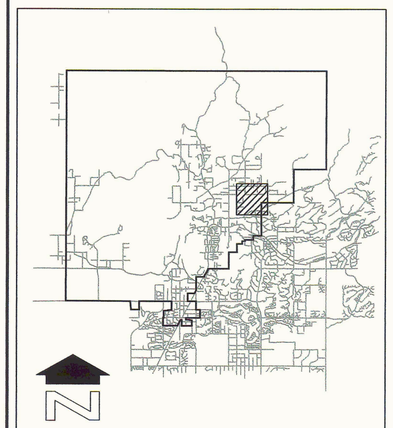
DMP BOUNDARY

CENTROID

FLOWPATH

NEW HYDROLOGY

HYDROLOGIC BASIN NAME SUB33B



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SUB-BASIN IDENTIFICATION

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PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 9

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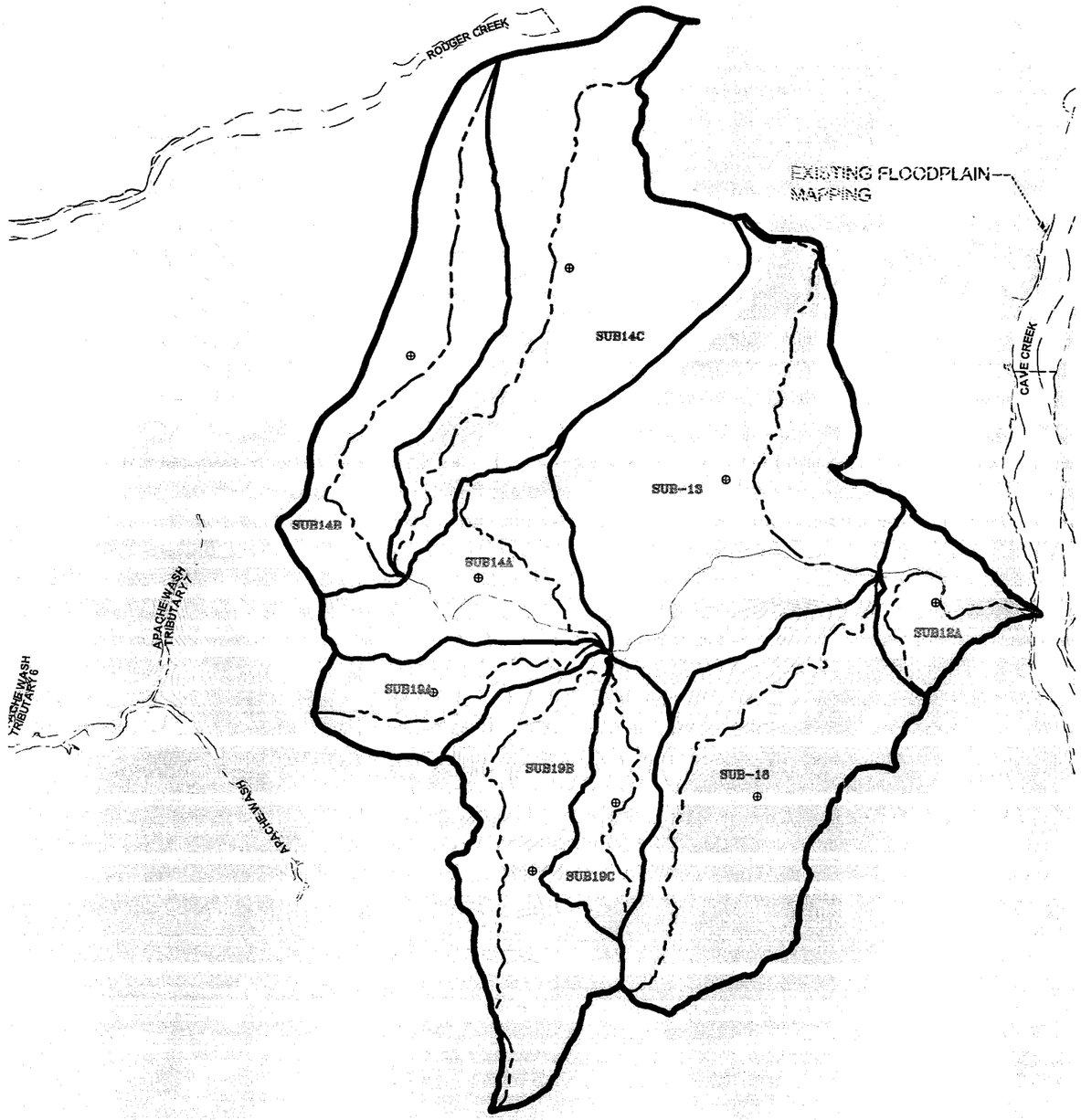


800' 0' 800' 1600'

SCALE: 1"= 800 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

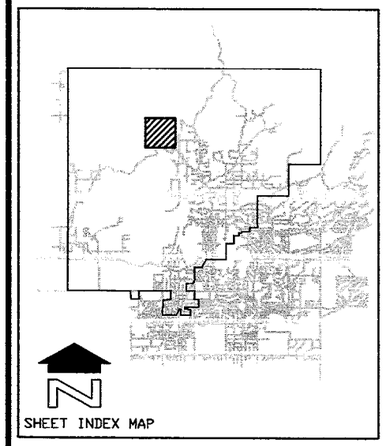
LEGEND

CENTROID

FLOWPATH

NEW HYDROLOGY

HYDROLOGIC BASIN NAME SUB-13



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN
PROJECT CONTROL NUMBER: 690.02.20
CONTRACT NUMBER: FCD 2004C072

SUB-BASIN IDENTIFICATION

PRELIMINARY
NOT FOR
CONSTRUCTION

HDR ENGINEERING, INC.
3200 East Camelback Road, Suite 350
PHOENIX, ARIZONA 85018-2311
(602) 522-7700

	BY	DATE
DESIGN	D. MARTINEZ	05/18/07
DESIGN CHK.	L. POTTER	05/18/07
PLANS	D. MARTINEZ	05/18/07
PLANS CHK.	M. FOUNTAIN	05/18/07

SHEET 7

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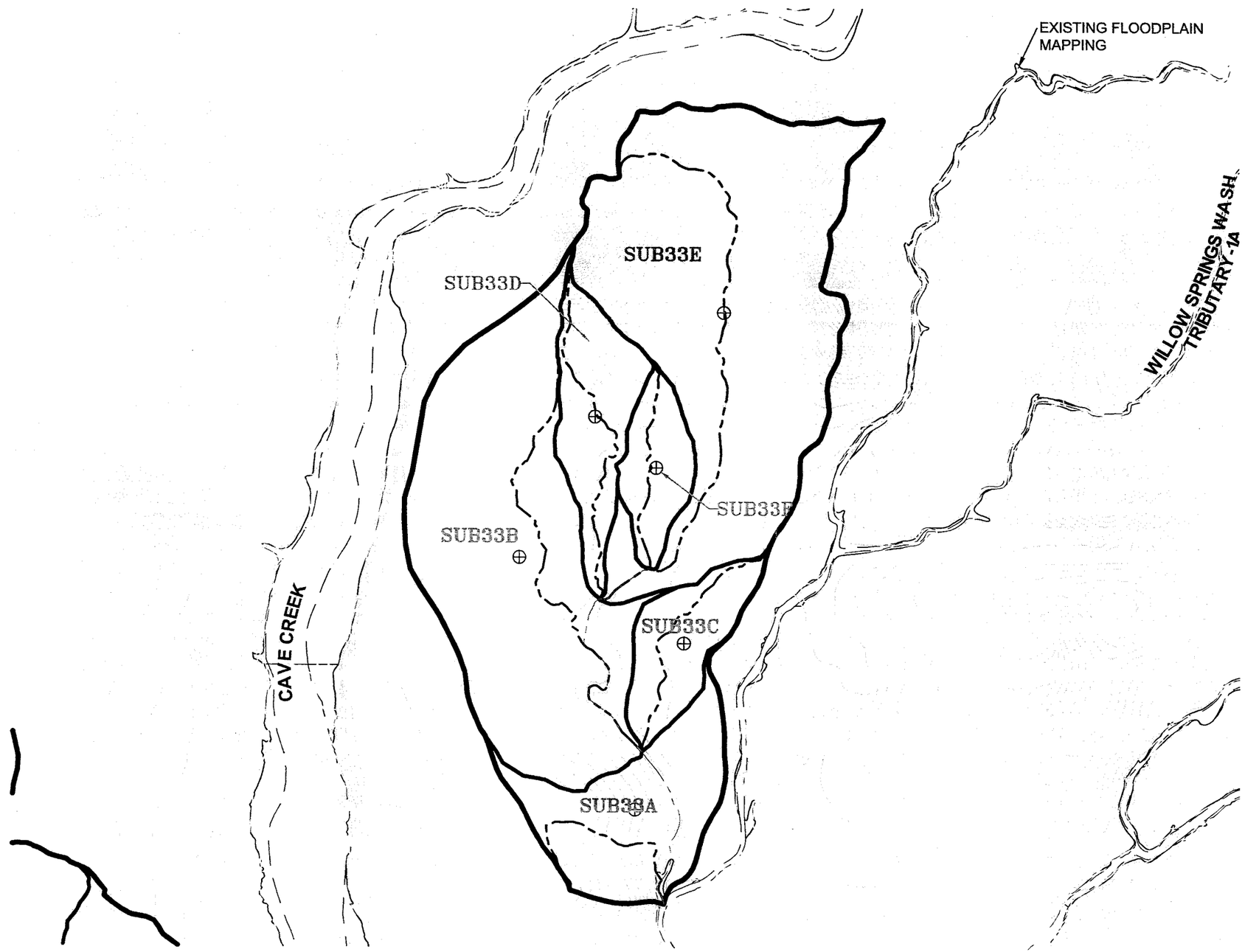


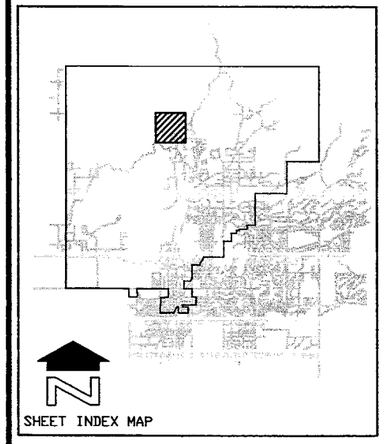
LEGEND

CENTROID

FLOWPATH

NEW HYDROLOGY

HYDROLOGIC BASIN NAME — SUB-13



400' 0' 400' 800'

SCALE: 1" = 400 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003 through December 2005

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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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SHEET 8

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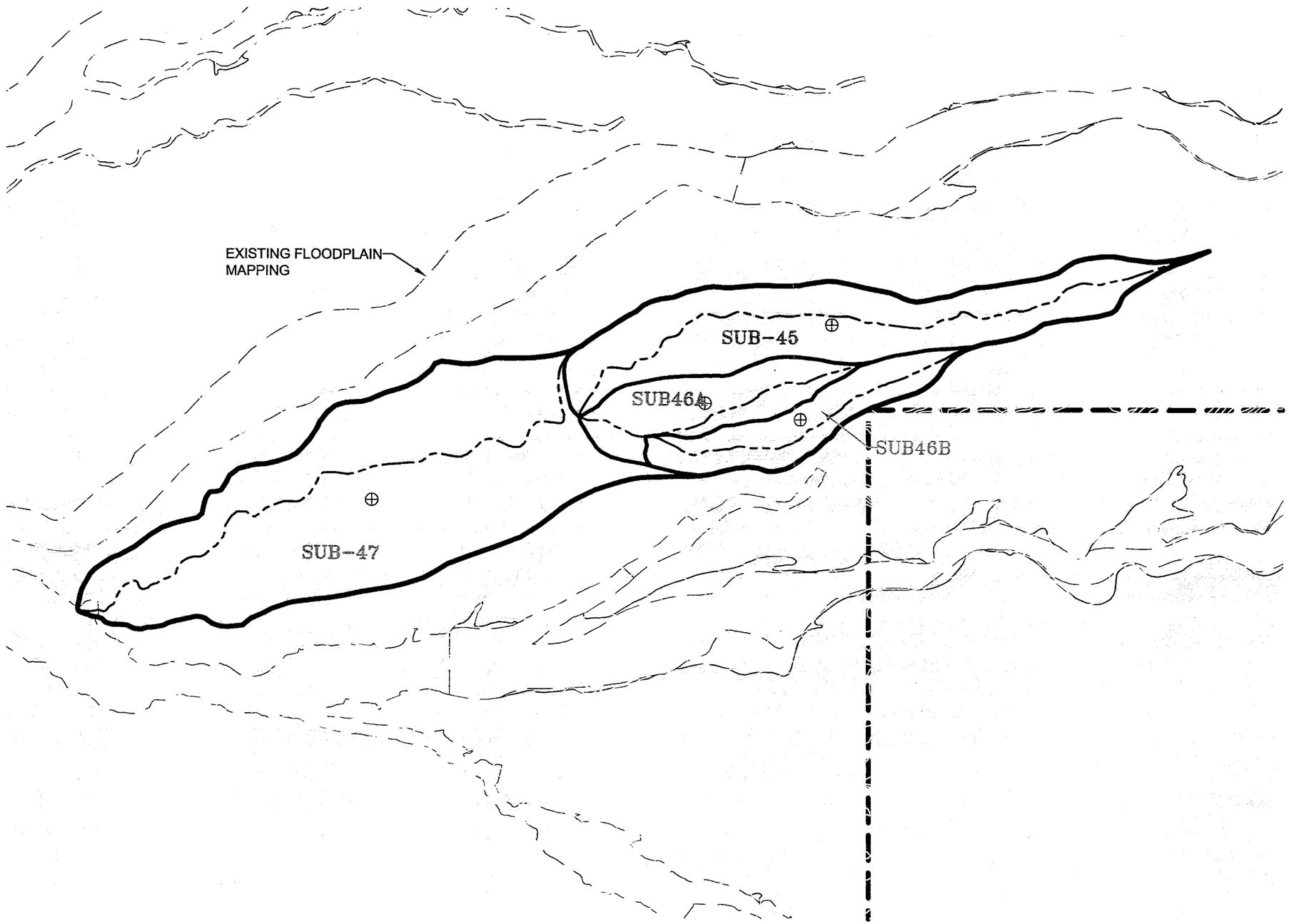
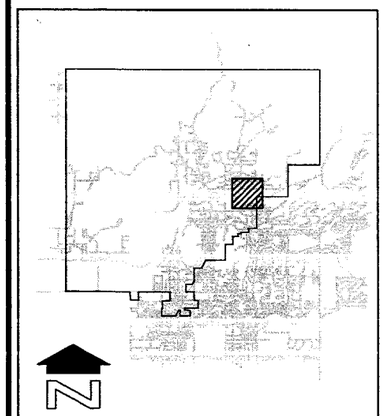


LEGEND

DMP BOUNDARY	
CENTROID	
FLOWPATH	
NEW HYDROLOGY	
HYDROLOGIC BASIN NAME	SUB33B



SHEET INDEX MAP

400' 0' 400' 800'

SCALE: 1"= 400 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003
through December 2005

NO.	REVISION	BY	DATE
2			
1			

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SHEET 9

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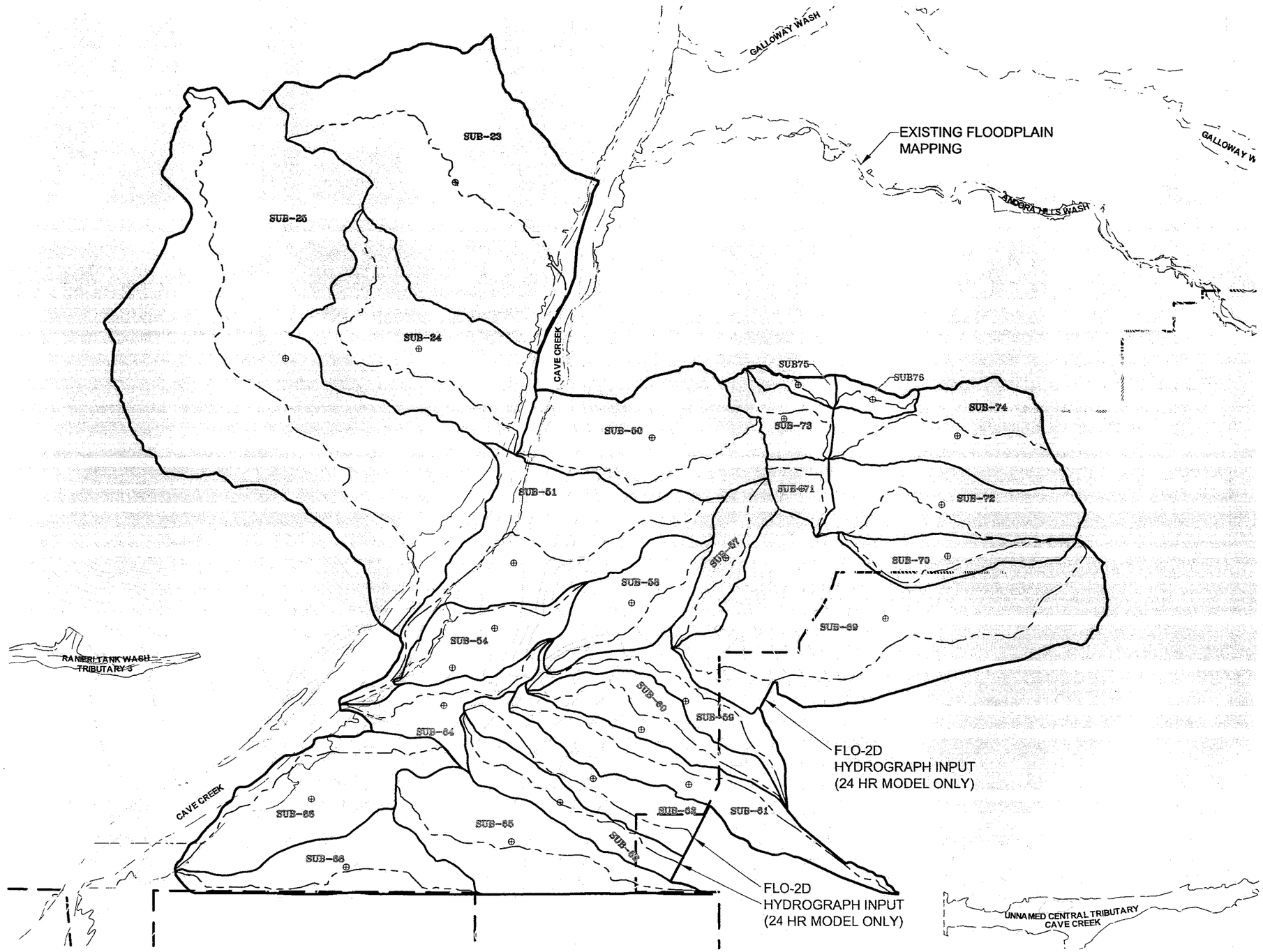


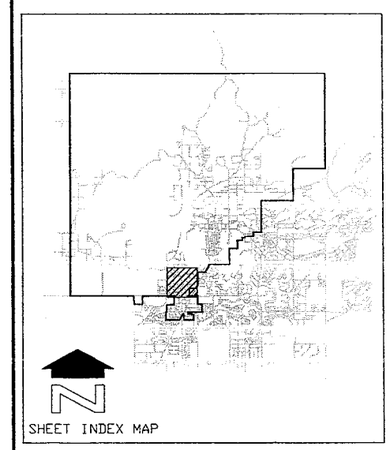
800' 0' 800' 1600'

SCALE: 1"= 800 FEET

CONTOUR INTERVAL = 10'
COOPER AERIAL SURVEY'S COMPANY
FLIGHT DATES: November 2003 through December 2005

LEGEND

DMP BOUNDARY	
CENTROID	
FLOWPATH	
NEW HYDROLOGY	
HYDROLOGIC BASIN NAME	SUB-13



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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SHEET 10

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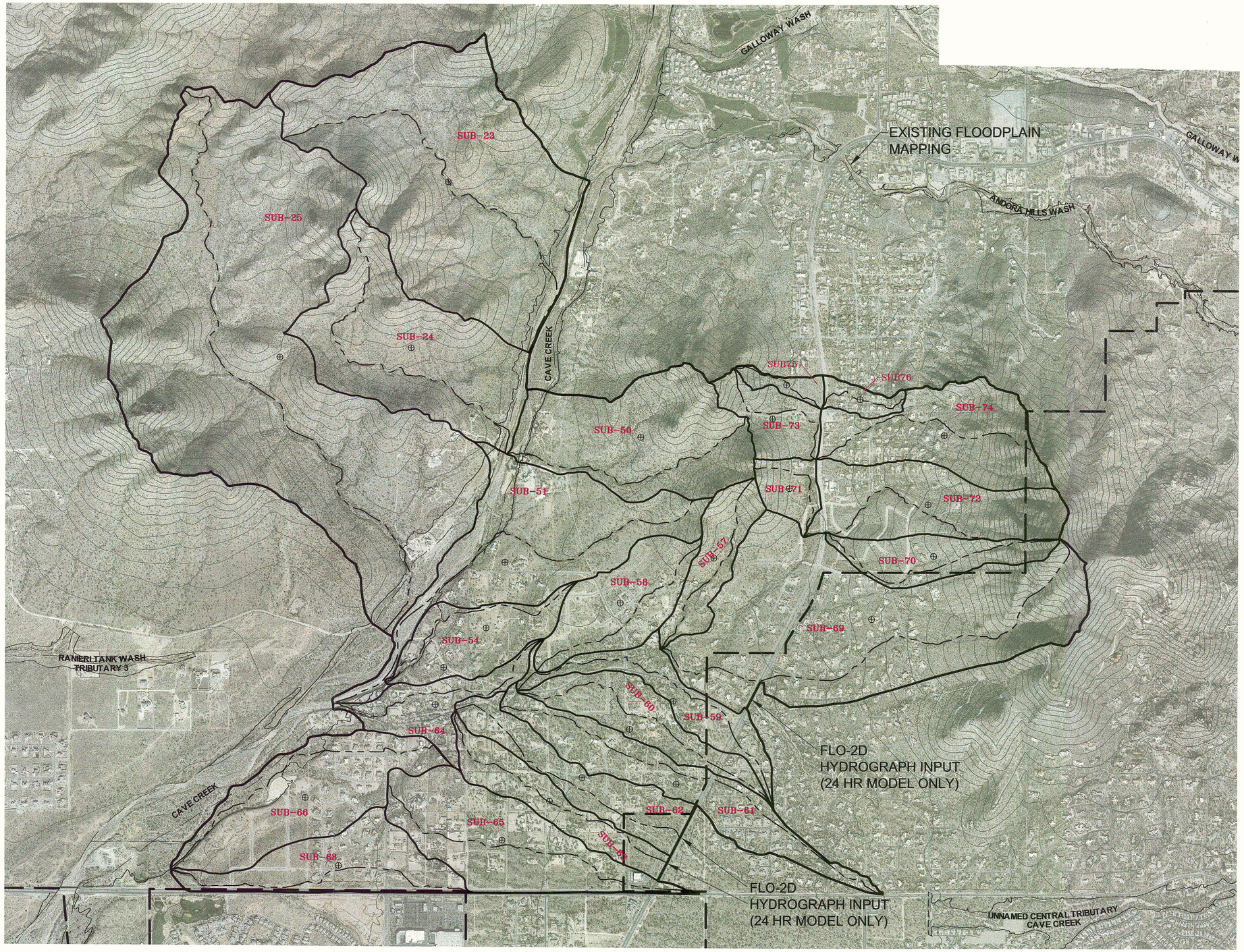
HEC-1 SCHEMATIC



LEGEND

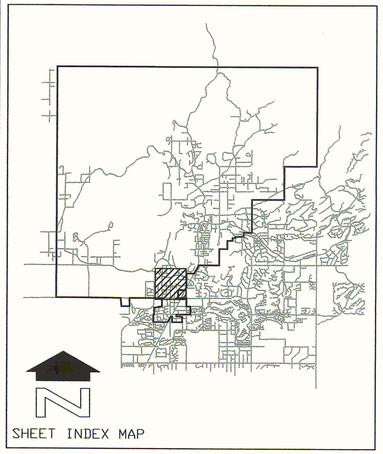
DMP BOUNDARY

CENTROID

FLOWPATH

NEW HYDROLOGY

HYDROLOGIC BASIN NAME — SUB-13



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SHEET 10

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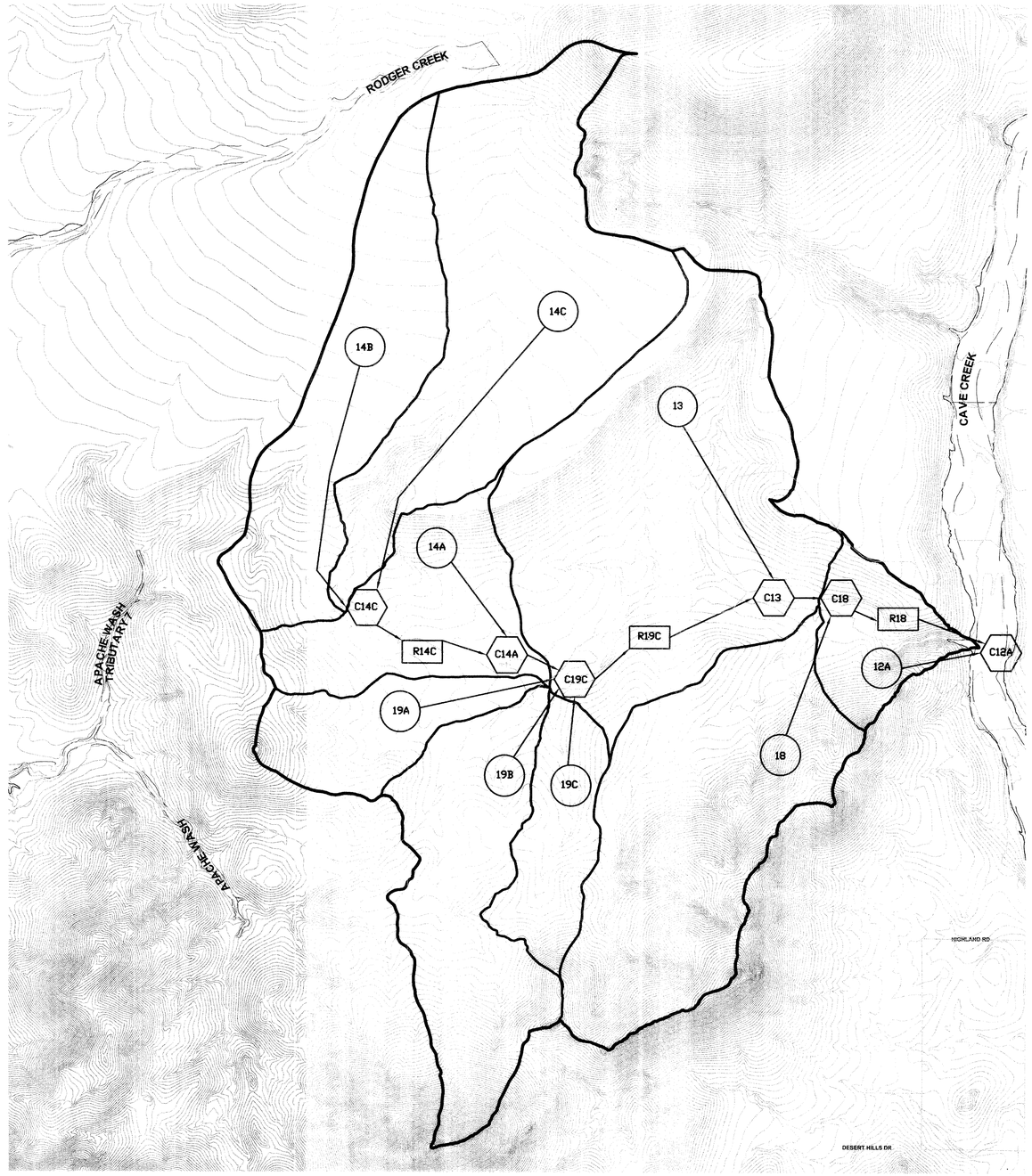


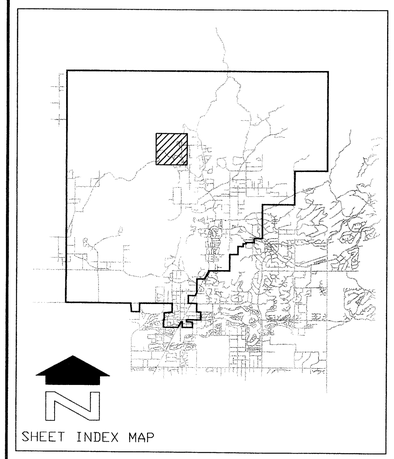
LEGEND

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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HEC-1 SCHEMATIC

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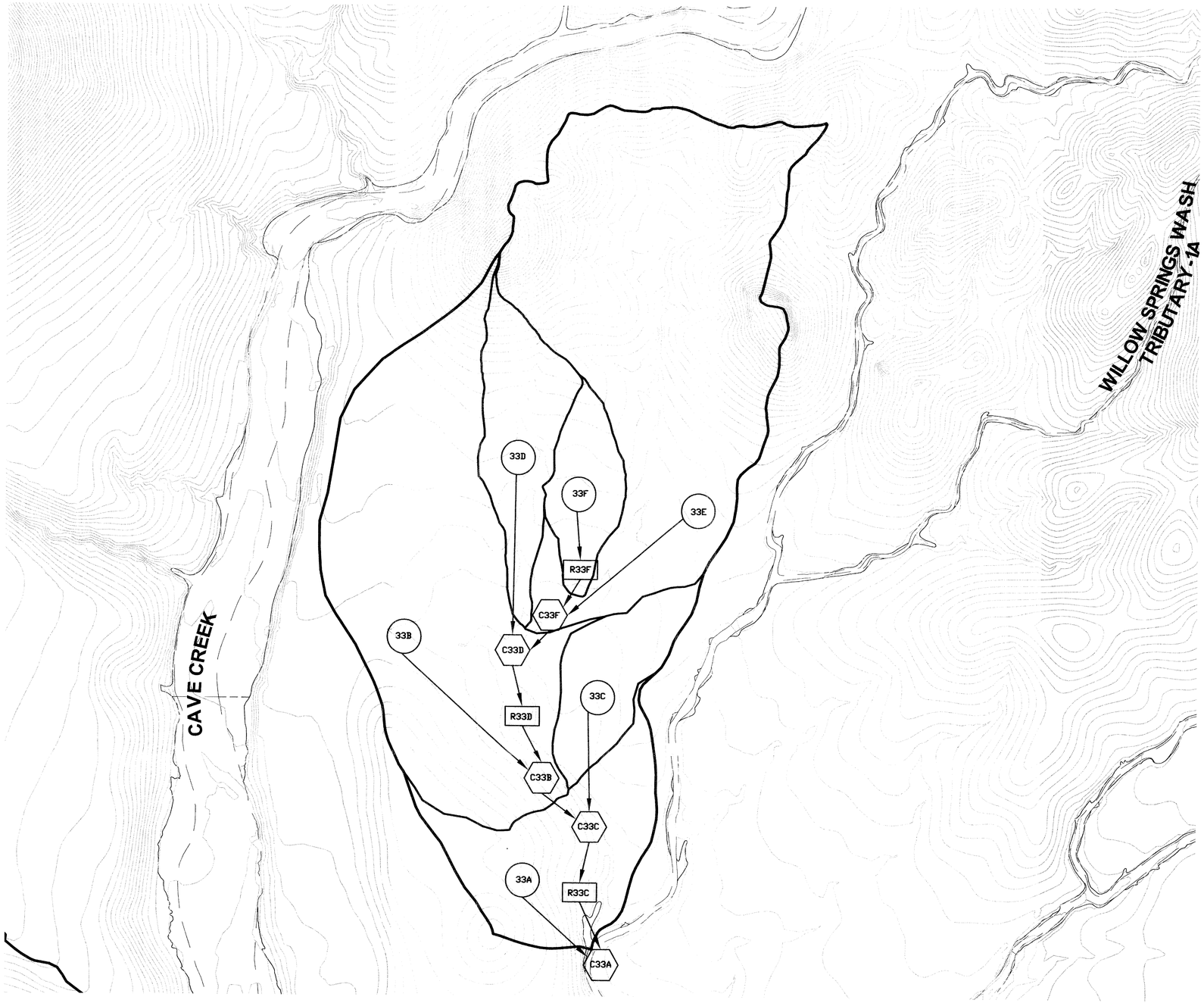
SHEET 11



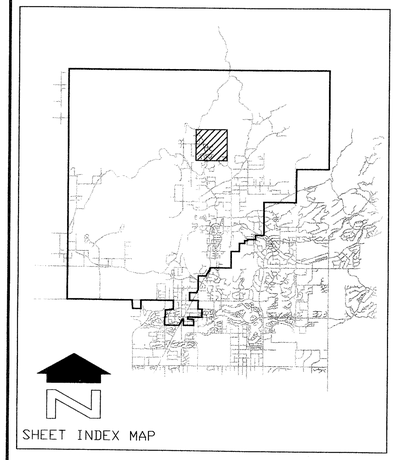
LEGEND

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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HEC-1 SCHEMATIC

400' 0' 400' 800'
SCALE: 1"= 400 FEET

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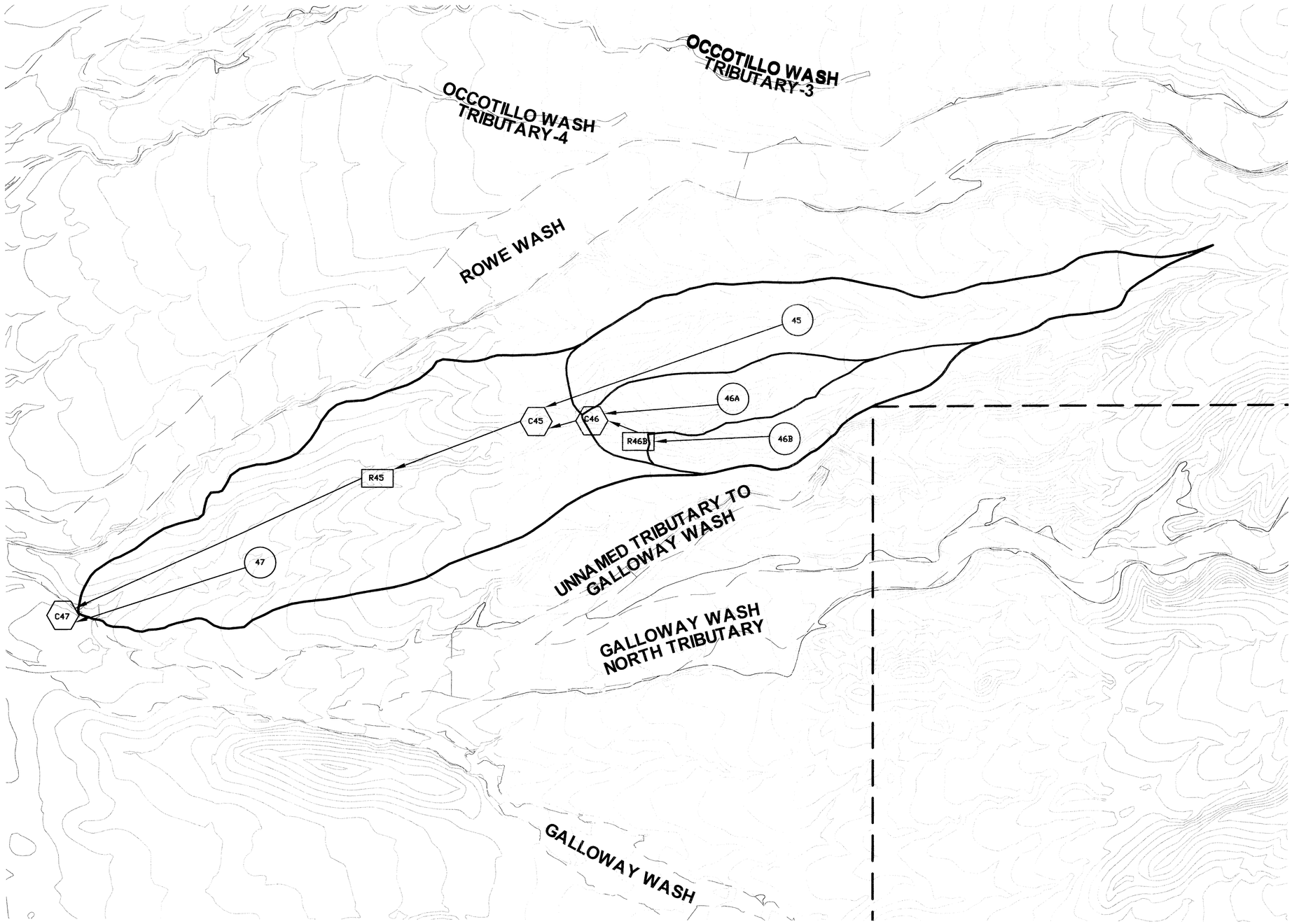


LEGEND

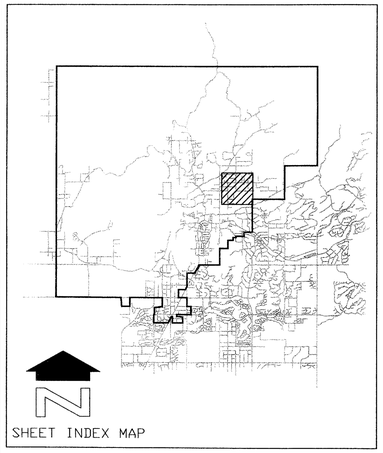
DMP BOUNDARY

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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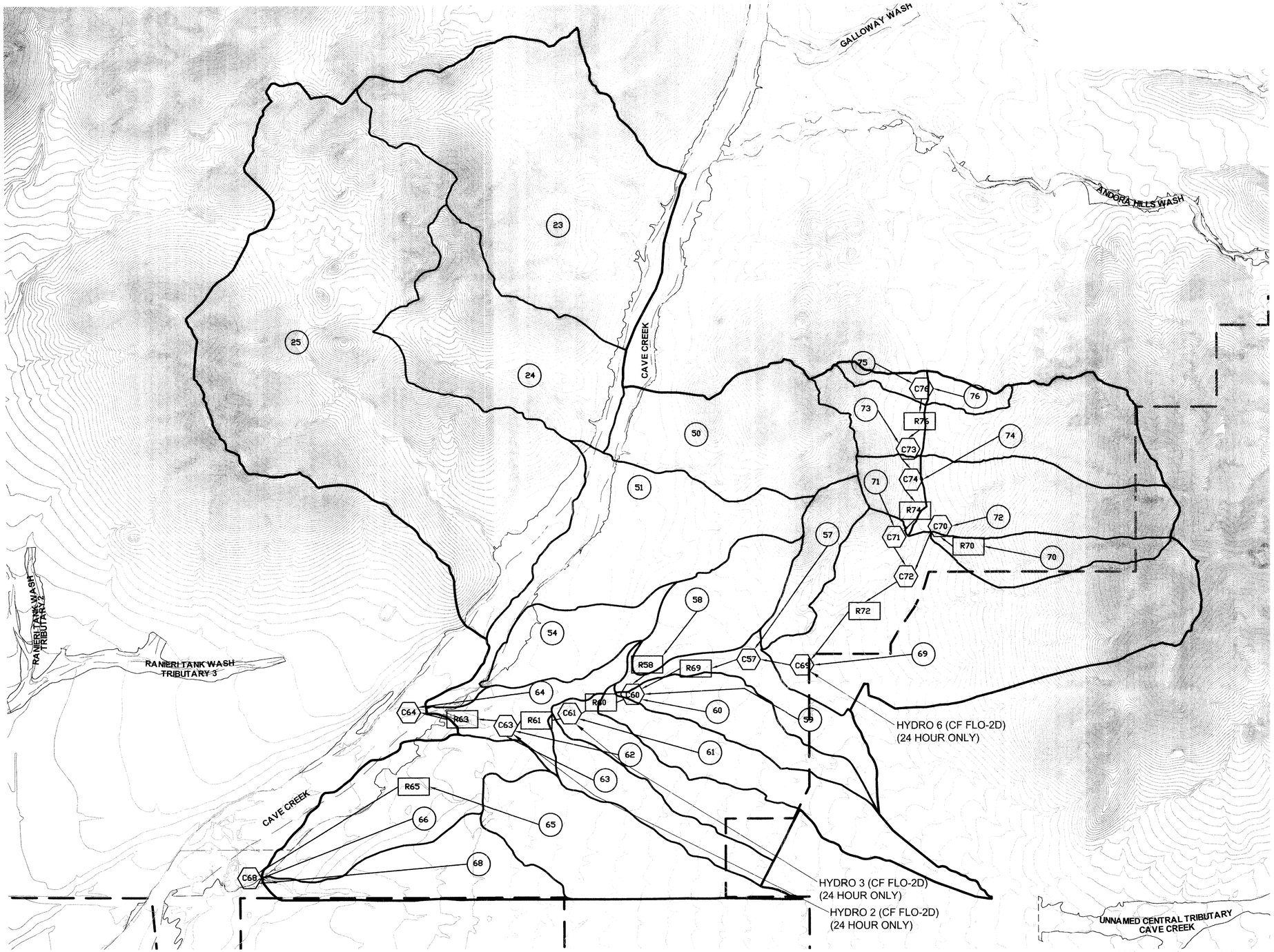
SHEET 13



LEGEND

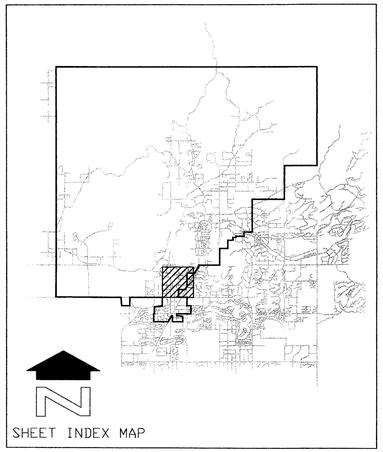
DMP BOUNDARY

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



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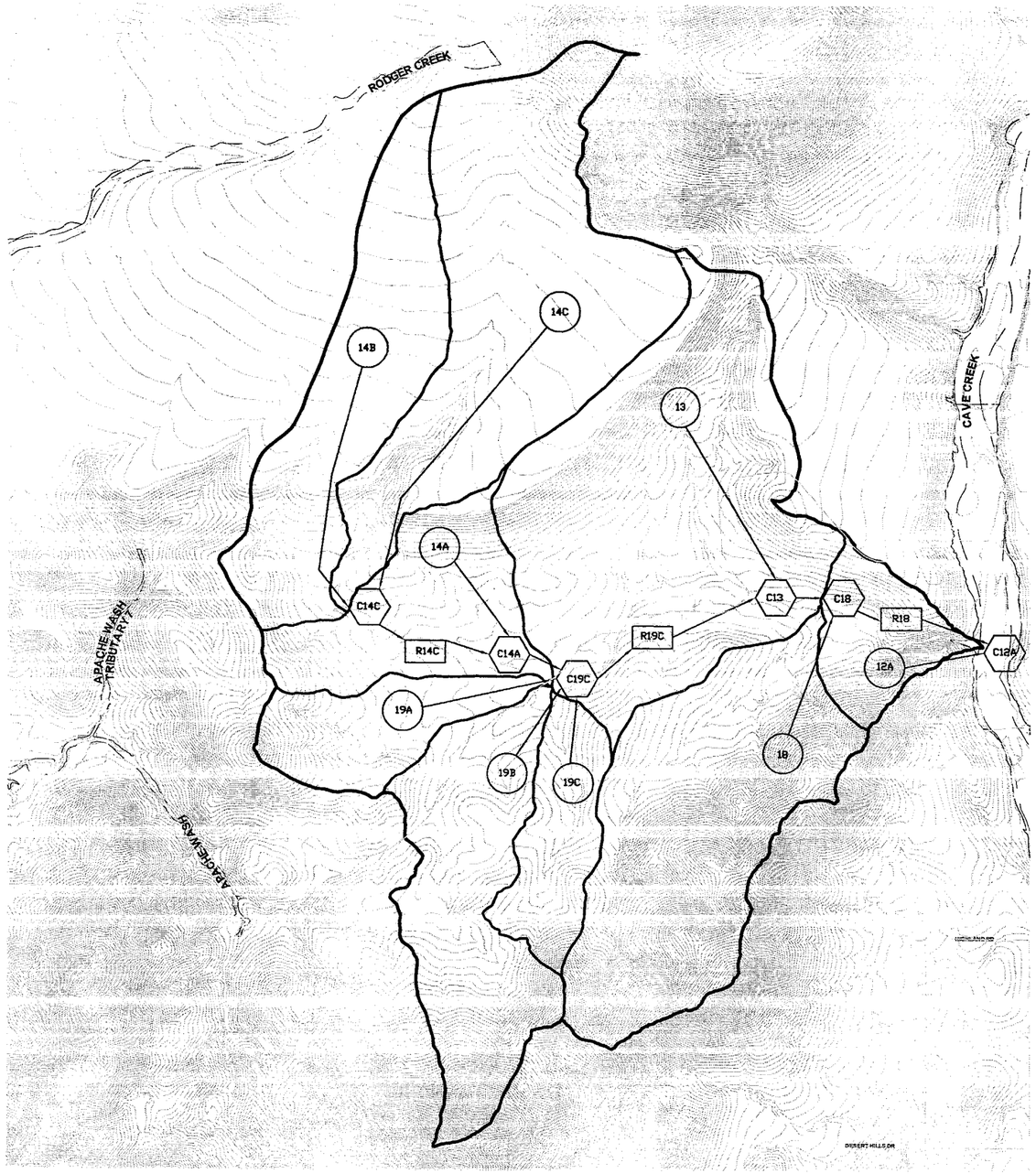
SHEET 14



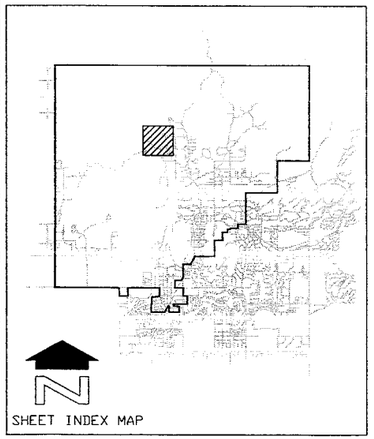
LEGEND

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



800' 0' 800' 1600'

SCALE: 1"= 800 FEET

CONTOUR INTERVAL = 10'
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SHEET 11

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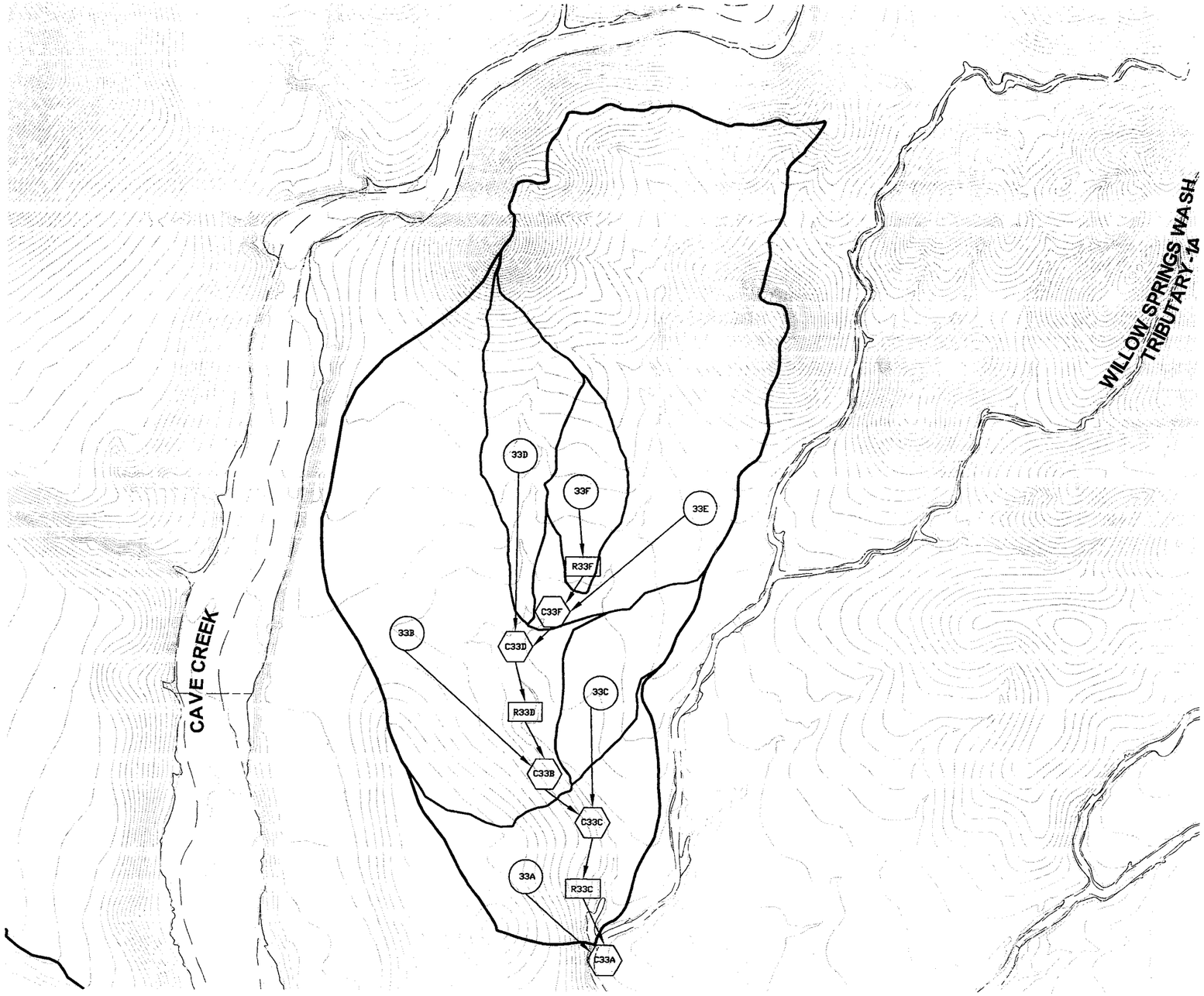

400' 0' 400' 800'
SCALE: 1"= 400 FEET

CONTOUR INTERVAL = 10'
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FLIGHT DATES: November 2003
through December 2005

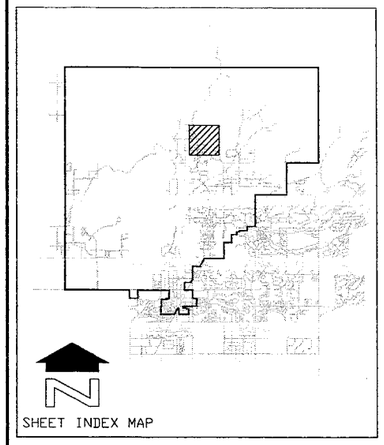
LEGEND

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



SHEET INDEX MAP

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
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SHEET 12

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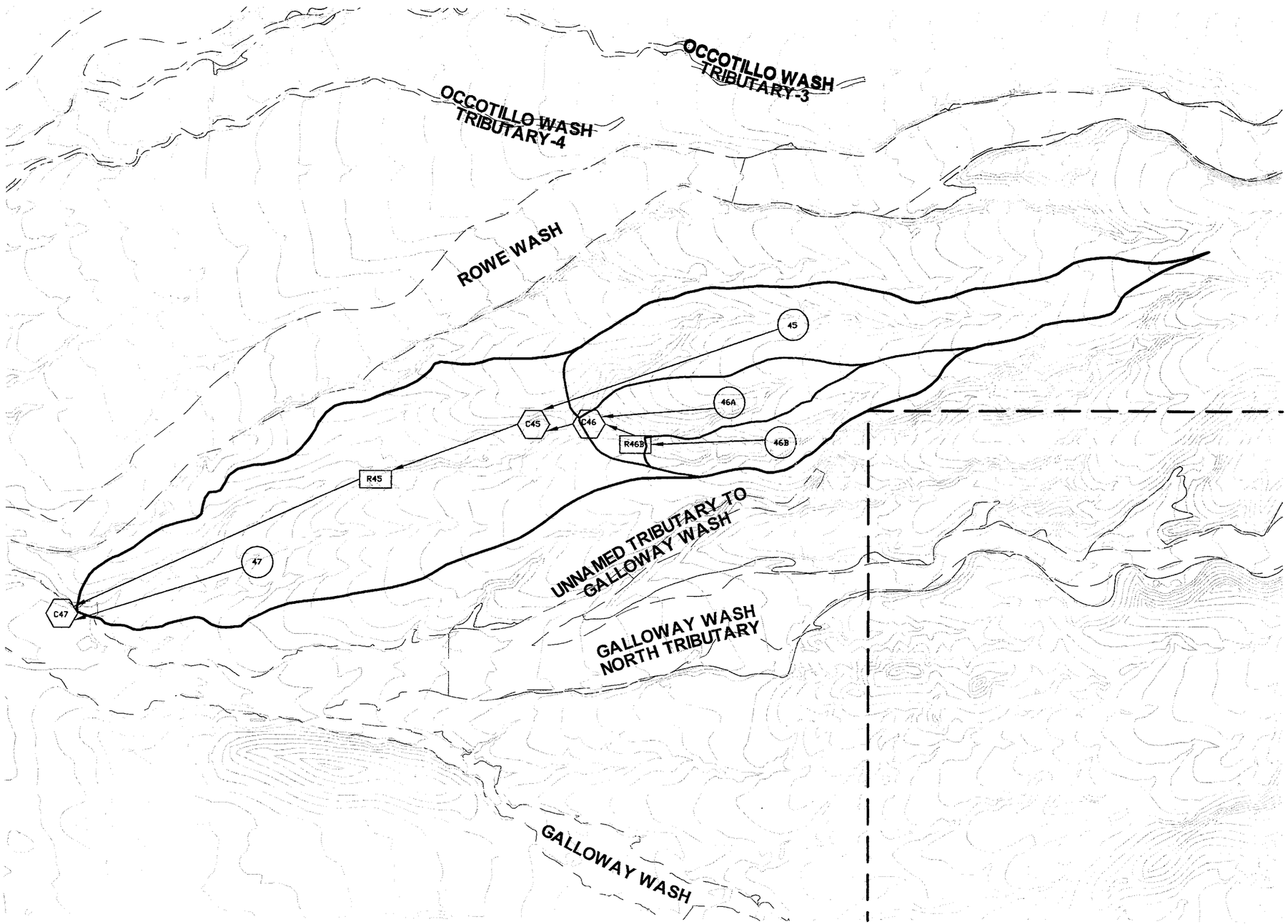
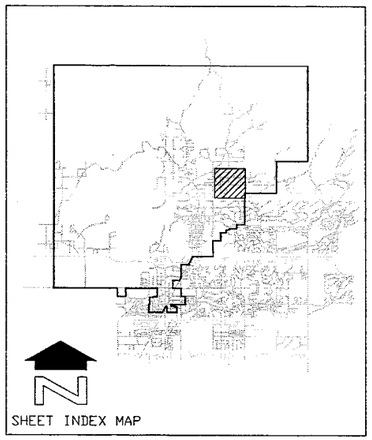


LEGEND

DMP BOUNDARY	
NEW HYDROLOGY	
SUBBASIN	13
CONCENTRATION POINT	C19C
ROUTING	R19C



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SHEET 13

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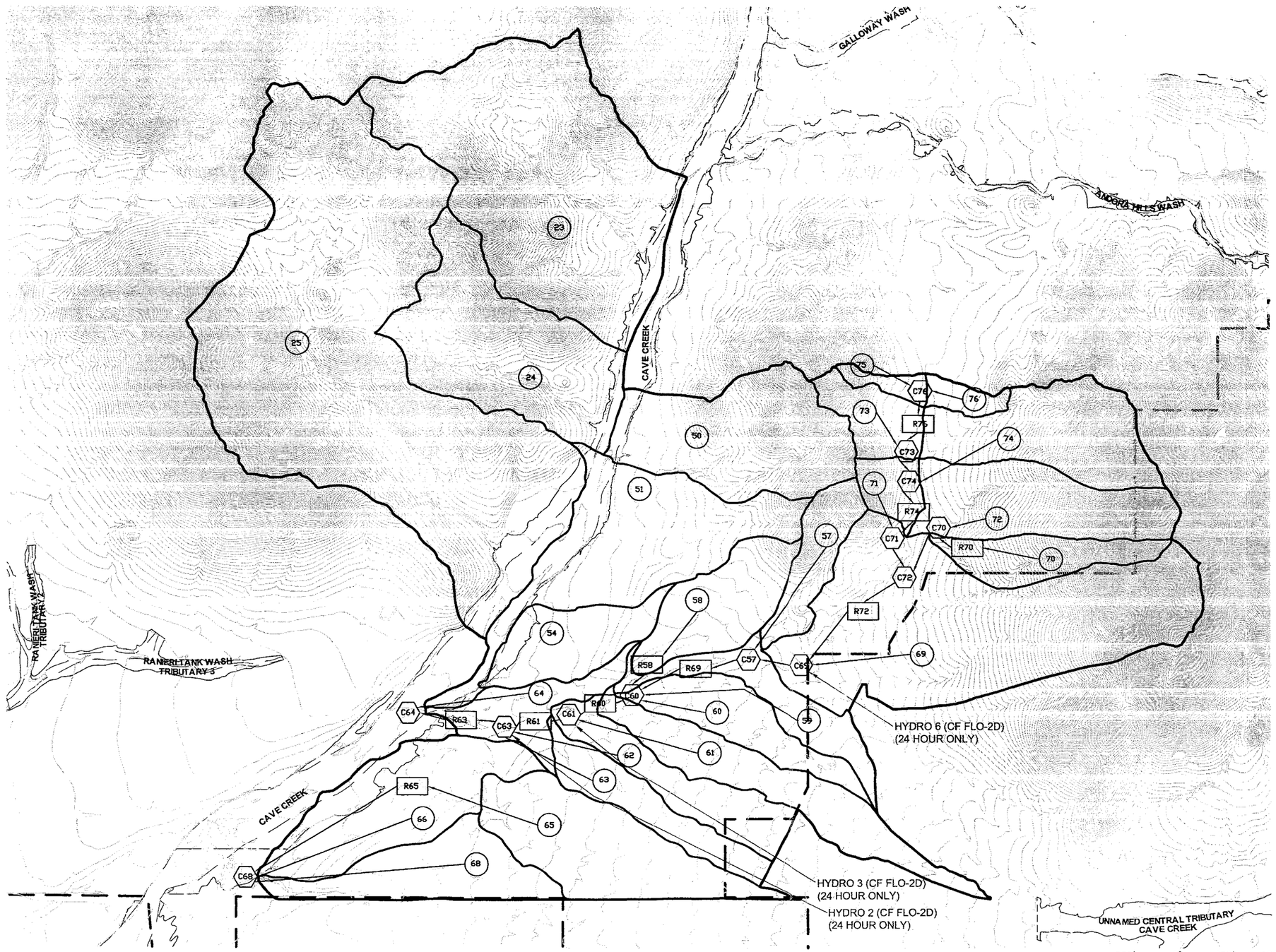

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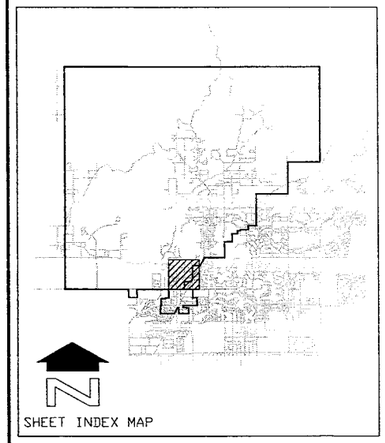
DMP BOUNDARY

NEW HYDROLOGY

SUBBASIN — 13

CONCENTRATION POINT — C19C

ROUTING — R19C



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SHEET 14

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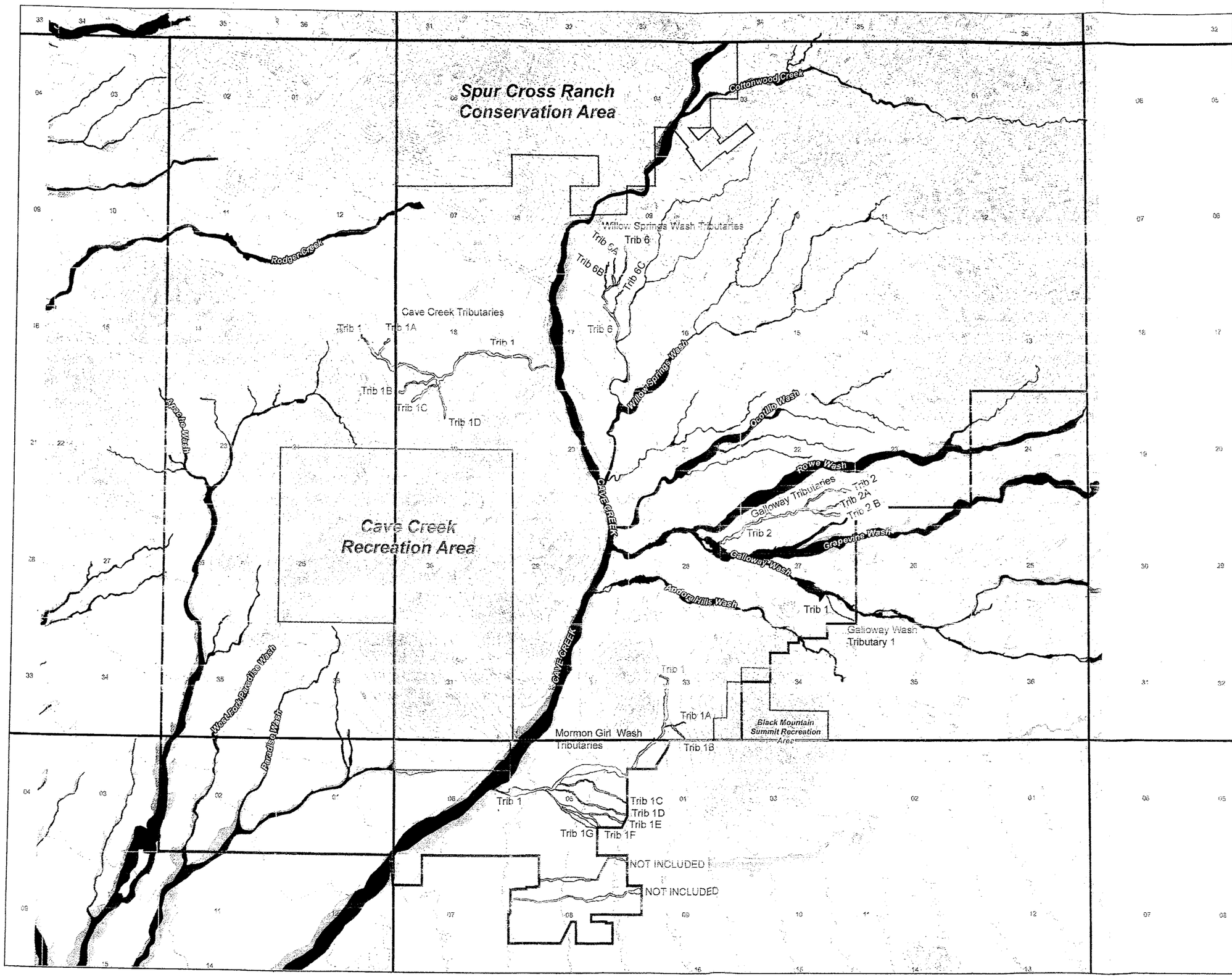
PHASE II DELINEATIONS



LEGEND

WASH IDENTIFICATION

Cave Creek DMP Study Area

Parks

FEMA Flood Hazard Zones

A

AE

FW

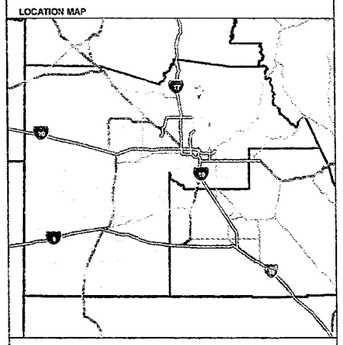
Recommended Phase II Delineations

50-ft Contours

Trib 1x Naming Assesment by HDR

N W E S

LOCATION MAP



SHEET 15

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CAVE CREEK DRAINAGE MASTER PLAN

PHASE II FLOODPLAIN DELINEATION NAMING

FCD 2004C072
REVISED: FEBRUARY 2007

Feet 0 500 1,000 2,000 3,000 4,000

Miles 0 0.25 0.5 1

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