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EASTERN MARICOPA COUNTY
AREA DRAINAGE MASTER STUDY

REPORT ADDENDUM:

The Multi-Frequency Analysis for the
East Maricopa County Area Drainage Master Plan

JUNE, 1987

Prepared for:
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
3335 West Durango Street
Phoenix, Arizona 85009

Prepared by:
A-N WEST, INC.
4120 North 20th Street
Phoenix, Arizona 85016

A-N WEST JOB NO. 4458-04

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1.0 INTRODUCTION

This report was prepared by A-N West, Inc. as an addendum to the Flood Control District of Maricopa County (FCDMC) contract FCD 84-26. The original project report was titled the "Eastern Maricopa County Area Drainage Master Study" (January 1987). This addendum study is titled The Multi-Frequency Analysis for the Eastern Maricopa County Area Drainage Master Plan. The purpose of this study is to evaluate the cost of master drainage plans for 2-, 5-, 10-, and 50-year frequency systems.

The study area (see Figure 1, Location Map) is located in eastern Maricopa County and northwest Pinal County between the Salt River and Gila River. The study area boundary is exactly the same as the original Area Drainage Master Study.

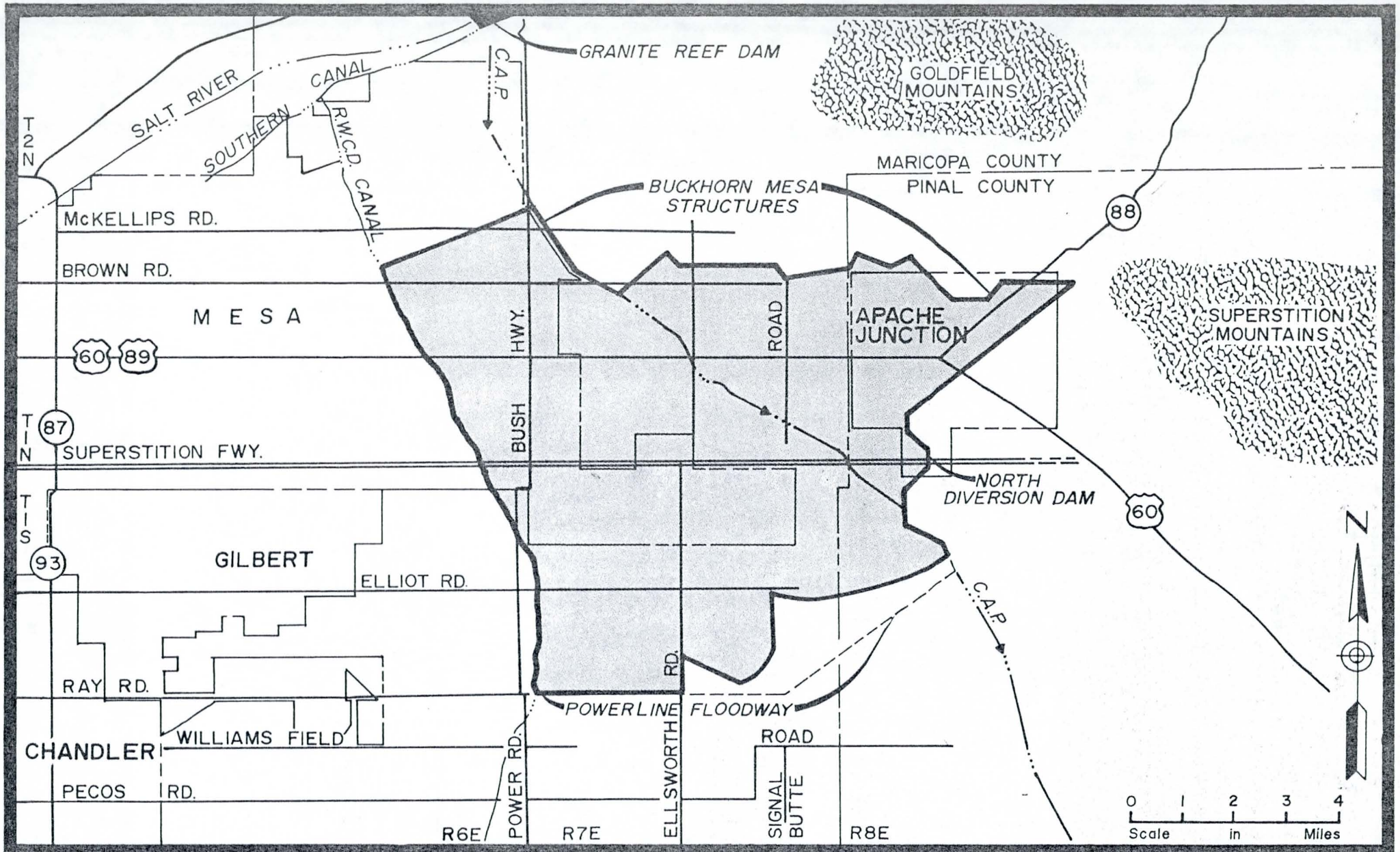
1.1 Purpose

The purpose of this report is to document the study approach and present the results of the Multi-Frequency Analysis Study. The two objectives of the study were:

1) To provide a plan for flood protection within the study area for the 2-, 5-, 10-, and 50-year storm event.

2) Reduce the peak inflows into the R.W.C.D. Floodway to maintain its design integrity for the 100-year storm event.

The analyzed systems incorporate combinations of regional detention basins, channels, and storm drains to reduce existing condition runoff peaks to the design capacity of the Soil Conservation Service/FCDMC R.W.C.D. Floodway. The HEC-1 computer program was employed to remodel the approximate 68-square mile watershed for the storm drain option for the 2-, 5-, and 10-year systems. The drainage systems meet the design discharges for the R.W.C.D. Floodway for the 100-year, 24-hour flood event (see Appendix I, R.W.C.D. Discharge Comparison Table).



LOCATION MAP

FIGURE 1

AN WEST INC.
Consulting Engineers

2.0 STUDY APPROACH

Both a channel-basin system and a storm drain-basin system were to be analyzed in this addendum study. A channel and basin system was analyzed for the 10-year and 50-year event. A channel system for the 2-year and 5-year event was not considered feasible due to the relatively small design discharge, large land costs and significant potential for diversion of flood flows, and consequent worsening of flooding in other areas associated with these two systems. Therefore, the channel-basin system evaluation was limited to the 10-year and 50-year storm event. The basic philosophy of the channel basin system was to provide a channel system to convey the design storm event and for flows in excess of the design storm (or R.W.C.D. design discharge) are diverted into regional basins over a side cast weir. The regional basin locations and sizes were not adjusted since a majority of the 100-year flows are carried in the channels (including freeboard) designed for the 50- and 10-year flows (see Figure 2).

The storm drain-basin system analysis was limited to the 2-, 5-, and 10-year storm event. A storm drain system for the 50-year event was not considered feasible because of the numerous large diameter storm drains necessary to convey the runoff from this event. Computer models of each system were developed which evaluated the effect of each system on the R.W.C.D. The 100-year 24-hour storm event was imposed on each system and regional basins were sized to reduce peak flows to the design discharge along the R.W.C.D.

In modeling the study area, the following assumptions were made:

1. All the SCS Buckhorn-Mesa flood retarding structures (including the Weekes Wash Dam) were in place and provide a minimum of 100-year flood protection. As of May 1987, there is no committed local sponsor for the Weekes Wash FRS project. Future studies should re-evaluate the assumption of the Weekes Wash FRS being constructed.

2. Apache Trail (US 60-80-89) did not alter runoff patterns and the numerous culverts under Apache Trail had 100-year capacity (see Appendix C in original report).

3. The Superstition Freeway was in place from the R.W.C.D. irrigation canal to the North Diversion Dam (see Figure 1, Location Map). It was further

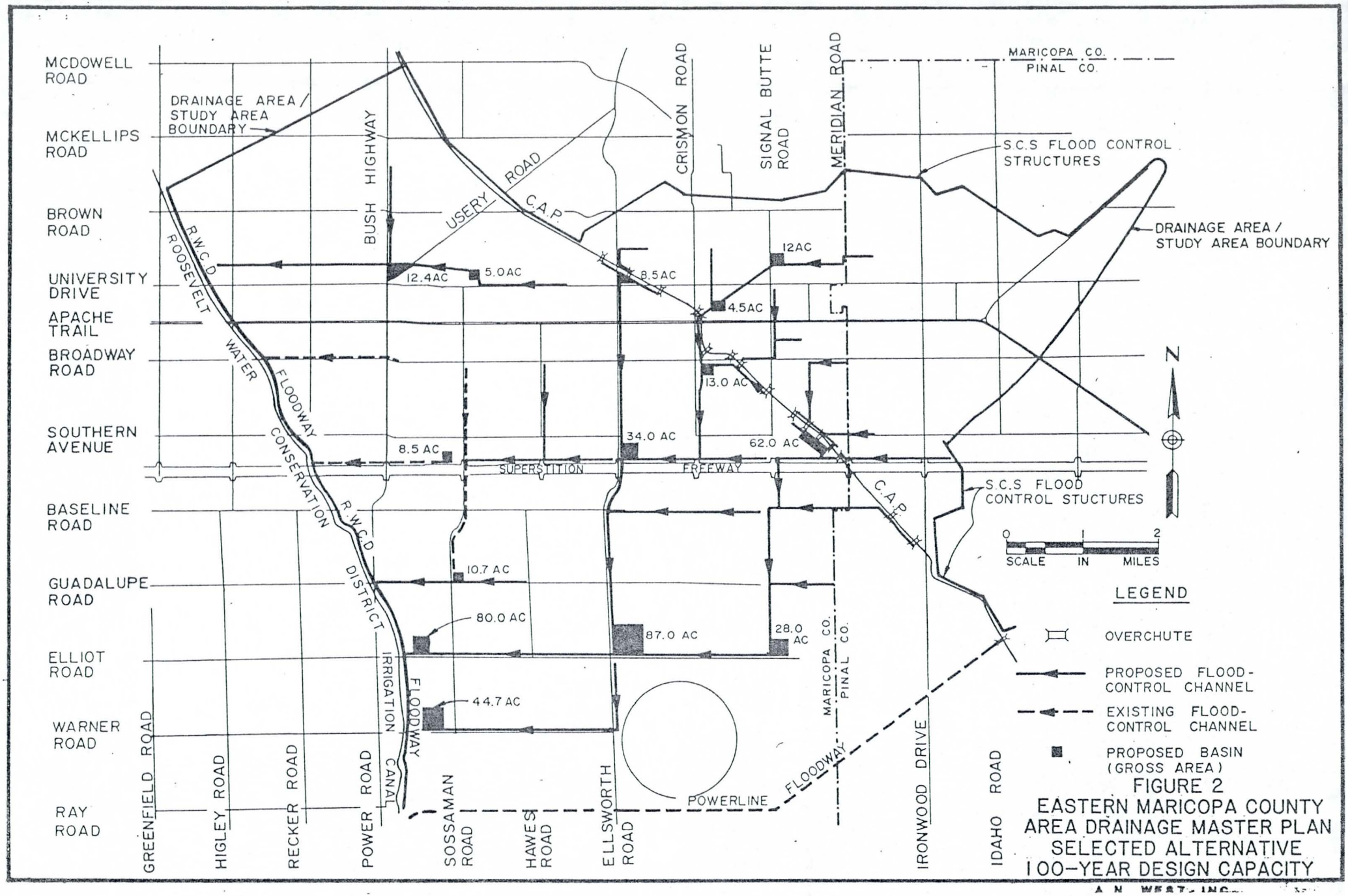


FIGURE 2
EASTERN MARICOPA COUNTY
AREA DRAINAGE MASTER PLAN
SELECTED ALTERNATIVE
100-YEAR DESIGN CAPACITY

A.N. WEST, INC.

assumed that the offsite drainage system for the Superstition would collect, concentrate, and pass offsite flows at several crossings.

4. The HEC-1 model's kinematic wave subroutine adequately represented the routing characteristics of the runoff occurring in the subareas.

5. The Central Arizona Project (CAP) functioned as designed and that overchutes passed concentrated flows without altering the runoff hydrograph (i.e., minimal ponding and detention at overchutes) (see Appendix C in original report).

6. All runoff from upstream of the C.A.P. is contained in regional basins below the C.A.P. and would not effect the storm drain size below the C.A.P.

The HEC-1 computer model were oriented to model the flows in the storm drain and to pass flows in excess of the pipe capacity to the next storm drain to the south. Some of the regional basins modeled were to reduce the required storm drain size and other basins were to limit the 100-year 24-hour flows to the design capacity along the R.W.C.D.

3.0 CHANNEL SYSTEM ANALYSIS

For the channel and basin system for the 10- and 50-year storm events, the discharges developed in the original study (January 1987) were used (see Original Study Appendix F). The basin locations and sizes remained the same as in the original study to reduce 100-year runoff to match the design discharges along the R.W.C.D (see Figure 2). The channel sizes were reduced to pass the systems design flow plus freeboard (see Appendix H, Comparison of Channel Parameters). The freeboard for the 50-year system was typically sufficient to pass 100-year flows. The freeboard for the 10-year channel system was typically insufficient to pass the 100-year flows, but the amount of breakout from the 10-year channels was limited to just upstream of drop structures at minimum freeboard. It was assumed that the breakout flows would not represent a large enough change in the discharge to warrant remodeling the entire study area, especially since the purpose of the study was to develop a comparative cost estimate.

The channel systems analyzed for the 10- and 50-year storm events are duplicates of the 100-year channel system proposed in the original study. The channels were resized to pass the design discharge and so were the culverts under the mile roads.

3.1 Results

The Channel-Basin Analysis Cost Estimate is provided in Table 1. The 50-year channel system reduced the required right-of-way to 334 acres (-1.5%), the channel excavation to 1,740,000 cubic yards (-23%), the channel lining to 129,000 cubic yards (-22%), and the culverts to 8,000 cubic yards (-15%). There is a cost reduction of about 10 percent for the 50-year channel-basin system over the 100-year system.

The 10-year channel system reduced the required right-of-way to 294 acres (-13%), the channel excavation to 1,200,000 cubic yards (-47%), the channel lining to 99,000 cubic yards (-40%), and the culverts to 6,000 cubic yards (-38%). The 10-year channel-basin system represents about a 20 percent cost reduction over the 100-year system.

TABLE 1
CHANNEL-BASIN ANALYSIS
COST ESTIMATE

CHANNELS	UNIT	UNIT COST	100-YR QTY.	50-YR QTY.	10-YR QTY.	100-YR COST	50-YR COST	10-YR COST
Excavation	C.Y.	$ 2.00	2,260,000	1,740,000	1,200,000	$ 4,500,000	$ 3,500,000	$ 2,400,000
Lining	C.Y.	$ 160.00	166,000	129,000	99,000	$26,500,000	$20,600,000	$15,800,000
R.O.W.	ACRE	$45,000.00	339	334	294	$15,300,000	$15,000,000	$13,200,000
Culverts	C.Y.	$ 200.00	9,500	8,080	5,900	$ 1,900,000	$ 1,600,000	$ 1,200,000

REGIONAL BASINS	UNIT	UNIT COST	100-YR QTY.	50-YR QTY.	10-YR QTY.	100-YR COST	50-YR COST	10-YR COST
Excavation	C.Y.	$ 1.50	6,400,000	6,400,000	6,400,000	$ 9,600,000	$ 9,600,000	$ 9,600,000
Weir Lining	C.Y.	$ 160.00	9,520	9,520	9,520	$ 1,500,000	$ 1,500,000	$ 1,500,000
Outlet	EACH	$20,000.00	14	14	14	$ 300,000	$ 300,000	$ 300,000
R.O.W.	ACRE	$45,000.00	410	410	410	$18,500,000	$18,500,000	$18,500,000
	TOTAL					$78,100,000	$70,600,000	$62,500,000

4.0 STORM DRAIN SYSTEM ANALYSIS

The storm drain option was analyzed for the 2-, 5-, and 10-year storm events. To analyze the significant amount of flow passing these storm drains during the 100-year event, a computer model was developed (see Figure 3 HEC-1 Schematic). The model was developed for the area below the C.A.P. and the flows from above the C.A.P. will drain into three regional basins just below the C.A.P. Therefore, runoff from above the C.A.P. will not have an influence on the storm drain below the C.A.P. The area below the C.A.P. was divided into 70 subareas of 0.25 to 1.0 square miles (see HEC-1 Schematic). There was also one subarea modeled above the C.A.P. below the Superstition Freeway. The runoff curve numbers used were from the original (January, 1987) study.

For the storm drain system a backbone system of 100-year channels was assumed. The Superstition Freeway, Guadalupe Channel, and the Red Mountain Parkway/Southeast Loop Channels were assumed to be in place with 100-year capacity. The Southeast Loop/Red Mountain Parkway alignment was assumed to be along Ellsworth and Elliot (West of Ellsworth) which corresponded to the original study.

The storm drains above the C.A.P. were sized based on flows generated in the original study (January, 1987) for the 2-, 5-, and 10-year systems. The last 1,000 feet to 1,500 feet of storm drain above the C.A.P. would need to be conveyed by open channel flow in order for the flow to pass over the C.A.P. in the existing overchutes. Storm drain sizes were chosen to pass the design discharge without diverting flows past the storm drain. The storm drain slopes were chosen such that the storm drain would gravity flow into the downstream open channel outlet (i.e. R.W.C.D., Broadway, Sossaman, Ellsworth, and Elliot).

The basins are located and sized to reduce the storm drain sizes downstream from the basins and/or to limit the flows to the design capacity of the R.W.C.D. floodway utilizing the concept of detention of the peak portion of the hydrology only. Other than the three basins just downstream of the C.A.P., the only basin sized to hold the entire flow (i.e., retention of the entire hydrograph) in the storm drain is the basin at Broadway Road and 72nd Street for the 5-year system. In order to maintain design flows in the R.W.C.D. floodway at Broadway Road, all flow in the Broadway channel east of 72nd Street needs to be retained in the basin.

4.1 Results

The storm drain system contains 42.4 miles of storm drain pipe (see Figure 4, Storm Drain Plan). The sizes of the storm drain for the 2-year system range from 12-inch to 54-inch diameter RCP, the 5-year system ranges from 21-inch to 78-inch diameter RCP, and the 10-year system ranges from 24-inch to 90-inch diameter RCP. The larger than desired pipe on the 10-year system resulted from not having an undeveloped area along Broadway (east of Power Road) to use as a regional basin for detaining excessive flows (see Appendix I, Storm Drain Inventory).

The basin sizes and locations vary for the three storm events analyzed depending upon the need for downsizing the storm drain and the amount of flow reduction required along the R.W.C.D. to limit flows to the design capacity along the R.W.C.D. The 10-year storm drain system has 15 basins with a total storage volume of 4,095 acre-feet. The 5-year system has 16 basins with a total storage volume of 4,149 acre-feet. The 2-year system has 17 basins with a total storage volume of 4,100 acre-feet (see Appendix I, Regional Basin Inventory).

There are approximately 25 miles of existing open channel and 4-1/2 miles of natural channel used in the system.

The Storm Drain-Basin Analysis Cost Estimate is provided in Table 2. There is an approximate 4 percent cost savings for the 2-year storm drain system over the 100-year channel-basin system. However, the 5-year storm drain system has a 9 percent increase in cost and the 10-year storm drain system has a 17.5 percent increase in cost over the 100-year channel-basin system.

TABLE 2
STORM DRAIN-BASIN ANALYSIS
COST ESTIMATE

CHANNELS	UNIT	UNIT COST	10-YR QTY.	5-YR QTY.	2-YR QTY.	10-YR COST	5-YR COST	2-YR COST
Excavation	C.Y.	$ 2.00	722,343	722,343	722,343	$ 1,400,000	$ 1,400,000	$ 1,400,000
Lining	C.Y.	$ 160.00	47,350	47,350	47,350	$ 7,600,000	$ 7,600,000	$ 7,600,000
ROW	ACRE	$45,000.00	100	100	100	$ 4,500,000	$ 4,500,000	$ 4,500,000
Culverts	C.Y.	$ 200.00	5,083	5,083	5,083	$ 1,000,000	$ 1,000,000	$ 1,000,000
Storm Drain*		Varies				$37,200,000	$30,100,000	$20,200,000

REGIONAL** BASINS	UNIT	UNIT COST	10-YR QTY.	5-YR QTY.	2-YR QTY.	10-YR COST	5-YR COST	2-YR COST
Excavation	C.Y.	$ 1.50	8,300,000	8,400,000	8,300,000	$12,400,000	$12,600,000	$12,400,000
Weir Lining	C.Y.	$ 160.00	72.5	70	60	$ 10,000	$ 10,000	$ 10,000
Outlet	EACH	$20,000.00	17	16	15	$ 340,000	$ 320,000	$ 300,000
ROW	ACRE	$45,000.00	608.5	620.5	614.5	$27,400,000	$27,900,000	$27,700,000
	TOTAL					$91,800,000	$85,400,000	$75,100,000

* See Appendix I, Storm Drain Inventory
** See Appendix I, Regional Basin Inventory, Storm Drain Option

5.0 SUMMARY

The Multi-Frequency Analysis for the East Maricopa County Area Drainage Master Plan analyzed the cost of the 2-, 5-, 10-, and 50-year storm systems.

The two types of systems analyzed were 1) channel and regional basin option, and, 2) a storm drain and regional basin option. The channel-basin option was analyzed for the 50- and 10-year frequency system and concluded that cost savings of 10 percent and 20 percent, respectively were possible.

The storm drain basin option was analyzed for the 10-, 5-, and 2-year frequencies and concluded that the 2-year system showed a cost savings of about 4 percent. Both the 5- and 10-year storm drain system showed an increase in system cost of 9 and 17.5 percent, respectively.

Clearly the cost of the pipe option is very expensive for the amount of flood protection being provided. The channel system has merit and there is a cost savings for the lesser frequency channel systems over the 100-year channel-basin system.

If a lesser frequency system is chosen a channel system designed for the 50-year storm event with freeboard, but capable of passing the 100-year storm within the project right-of-way would provide equal protection for less expensive without increasing liability.

Appendix H

Channel-Basin Option

CHANNEL OPTION
PARAMETER COMPARISON TABLE

SHEET 4 OF 20 — D.O.E. ELECTRIC EASEMENT

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
13+15										
	1134		152.5	2.0	180.5	593		79.7	2.0	107.7
13+25										
	1134	.0025	95.8	1.75	147.8	593	.0025	50.0	1.75	102.0
13+60										
	1134	.0025	18.0	4.5	77.5	593	.0034	6.2	4.5	65.7
47+55										
	1068	.0026	16.4	4.5	75.9	584	.0034	6.0	4.5	65.5
77+40										
	1001	.0026	15.2	4.5	74.7	575	.0034	5.9	4.5	65.4
112+50										
	693	.0031	8.4	4.5	67.9	398	.0037	4.4	4.0	63.9
141+30.45										

SHEET 5 OF 20 — D.O.E. ELECTRIC EASEMENT

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
156+49.24										
	500	.0037	4.5	4.5	56.5	452	.0040	3.1	4.5	55.1
160+89										
	522	.0036	4.7	4.5	64.2	254	.0042	2.8	3.5	56.3
198+00										
	340	.0049	0.6	4.5	60.1	166	.0045	2.2	3.0	52.7
210+39										
	225	.0032	8.0	2.5	54.0	149	.0049	1.5	3.0	52.0
218+39										
	401	.0037	4.5	4.0	61.0	149	.0049	1.5	3.0	52.0
274+67										

SHEET 5 OF 20 — BUSH HIGHWAY CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
113+30										
	474	.0039	3.5	4.5	63.0	201	.0049	1.1	3.5	54.6
150+00										
	122	.0056	0.4	3.0	50.9	50	.0059	0.7	2.0	45.2
189+80										

SHEET 6 OF 20 SUPERSTITION FREEWAY CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
192+02										
	649	.0032	7.4	4.5	66.9	231	.0037	4.8	3.0	55.3
210+00										
	649	.0032	7.4	4.5	66.9	231	.0037	4.8	3.0	55.3
214+00										
	296	.0038	4.2	3.5	57.7	157	.0038	4.5	2.5	52.0
282+60										

SHEET 6 OF 20 HAWES ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
68+00										
	496	.0038	4.0	4.5	63.5	177	.0044	2.6	3.0	53.1
141+30										

SHEET 6 OF 20 ELLIOT ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
230+00										
	1156	.0025	18.4	4.5	77.9	1030	.0026	15.7	4.5	75.2
259+31										

SHEET 7 OF 20 GUADALUPE ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
8+23										
	1040	.0026	15.9	4.5	75.4	364	.0034	6.3	3.5	59.8
28+00										
	1020	.0026	15.5	4.5	75.0	359	.0034	6.2	3.5	59.7
58+00										
	1000	.0026	15.1	4.5	74.6	353	.0035	5.9	3.5	59.4
63+00										
	184	.0035	5.9	2.5	53.4	73	.0046	2.4	2.0	46.9
142+00										

SHEET 8 OF 20 BROADWAY ROAD - C.A.P. CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
426+40										
	1002	.0026	15.2	4.5	74.7	352	.0040	3.1	4.0	59.6
440+92										
	665	.0032	7.7	4.5	67.2	233	.0037	4.8	3.0	55.3
449+80										
	121	.0044	2.6	2.5	50.1	51	.0058	0.7	2.0	45.2
474+80										

SHEET 8 OF 20 ELLIOT ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
12+68										
	500	.0021	6.8	4.5	52.8	500	.0021	6.8	4.5	52.8
21+00										
	1587	.0023	27.5	4.5	87.0	1233	.0024	20.2	4.5	79.7
45+30										
	1366	.0023	23.3	4.5	82.8	1152	.0025	18.3	4.5	77.8
72+28										
	1227	.0024	20.2	4.5	79.7	1094	.0025	17.3	4.5	76.8
105+25										
	1185	.0025	18.9	4.5	78.4	1077	.0026	16.6	4.5	76.1
125+45										

SHEET 9 OF 20 ELLIOT ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
125+45										
	1094	.0025	17.2	4.5	76.7	1040	.0026	15.9	4.5	75.4
152+40										
	465	.0023	5.7	4.5	65.2	465	.0023	5.7	4.5	65.2
165+00										
	1305	.0024	21.6	4.5	81.1	1163	.0025	18.5	4.5	78.0
199+20										
	1156	.0025	18.4	4.5	77.9	1030	.0026	15.7	4.5	75.2
230+00										

SHEET 9 OF 20 ELLSWORTH CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
153+00										
	535	.0022	7.4	4.5	59.4	535	.0022	7.4	4.5	59.4
172+00										
	1235	.0025	20.1	4.5	79.6	633	.0033	7.0	4.5	66.5
210+00										
	817	.0029	11.0	4.5	70.5	476	.0039	3.6	4.5	63.1
234+60										
	797	.0029	10.6	4.5	77.1	464	.0039	3.4	4.5	62.9
260+00										
	250	.0031	9.4	2.5	67.4	250	.0031	9.4	2.5	67.4
274+00										

SHEET 10 OF 20 ELLSWORTH STREET CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
274+00										
	250	.0031	9.4	2.5	82.4	250	.0031	9.4	2.5	82.4
290+45										
	150	.0044	1.7	3.0	53.7	150	.0044	1.7	3.0	53.7
300+00										
	1339	.0024	22.2	4.5	81.7	765	.0030	9.8	4.5	69.3
326+11										
	1233	.0024	20.3	4.5	79.8	705	.0031	8.6	4.5	68.1
356+80										
	1132	.0025	17.9	4.5	77.4	752	.0030	9.6	4.5	69.1
390+00										
	716	.0031	8.8	4.5	68.3	476	.0034	6.3	4.0	62.8
415+80										
	365	.0046	1.2	4.5	60.7	365	.0046	1.2	4.5	60.7
423+00										
	75	.0042	0.8	2.5	55.8	75	.0042	0.8	2.5	55.8
426+50										
	182	.0043	2.8	3.0	53.3	75	.0061	0.2	2.5	47.7
428+90										

SHEET 10 OF 20 C.A.P. CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
10+85										
	182	.0043	2.8	3.0	53.3	72	.0063	0.1	2.5	47.6
30+20										
	NO CHANNEL IN THIS REACH					NO CHANNEL IN THIS REACH				
32+30										
	290	.0027	18.3	2.0	67.3	290	.0027	18.3	2.0	67.3
40+65										
	757	.003	9.7	4.5	69.2	350	.0048	0.9	4.5	60.4
43+00										
	357	.0047	1.0	4.5	60.5	143	.0050	1.2	3.0	51.7
61+65										

SHEET 11 OF 20 SUPERSTITION FREEWAY CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
286+79										
	100	.0015	2.3	3.0	54.3	100	.0015	2.3	3.0	54.3
297+80										
	1029	.0026	15.6	4.5	75.1	778	.0029	10.2	4.5	69.7
339+70										
	234	.0037	4.9	3.0	55.4	97	.0051	1.4	2.5	48.9
388+00										

SHEET 11 OF 20 CRISMON ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
341+09										
	804	.0029	10.7	4.5	70.2	693	.0031	8.4	4.5	67.9
385+40										
	693	.0031	8.4	4.5	67.9	597	.0034	6.3	4.5	65.8
411+31										
	620	.0033	6.7	4.5	66.2	620	.0033	6.7	4.5	66.2
418+20										
	1380	.0024	23.0	4.5	82.5	653	.0032	7.5	4.5	67.0
419+20										
	484	.0038	3.8	4.5	63.3	370	.0039	3.6	4.0	60.1
446+80										

SHEET 12 OF 20 BASELINE ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
258+40										
	520	.0037	4.6	4.5	64.1	220	.0038	4.3	3.0	54.8
322+00										
	236	.0037	5.0	3.0	55.5	90	.0041	3.6	2.0	48.1
360+00										

SHEET 12 OF 20 SIGNAL BUTTE ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
259+53										
	1080	.0025	16.7	4.5	65.7	1085	.0026	16.7	4.5	65.7
268+40										
	2000	.0021	37.0	4.5	96.5	1085	.0026	16.7	4.5	76.2
298+80										
	1673	.0022	29.8	4.5	89.3	908	.0027	13.2	4.5	72.7
311+23										
	1227	.0024	20.2	4.5	79.7	793	.0029	10.6	4.5	70.1
333+60										
	1167	.0025	18.6	4.5	78.1	754	.0030	9.6	4.5	69.1
350+28										
	1129	.0025	17.9	4.5	77.4	742	.0030	9.4	4.5	68.9
363+99										

SHEET 13 OF 20 BASELINE ROAD - C.A.P. CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
365+45										
	1129	.0025	17.9	4.5	77.4	742	.0030	9.4	4.5	68.9
374+80										
	570	.0035	5.6	4.5	65.1	223	.0038	4.4	3.0	54.9
411+00										
	513	.0037	4.4	4.5	63.9	201	.0040	3.6	3.0	54.1
449+50										
	454	.0040	3.1	4.5	62.6	169	.0045	2.3	3.0	52.8
484+00										

SHEET 13 OF 20 GUADALUPE ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
311+33										
	249	.0036	5.5	3.0	56.0	103	.0049	1.7	2.5	49.2
368+00										

SHEET 14 OF 20 SIGNAL BUTTE - SUPERSTITION FREEWAY

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
375+70										
	592	.0034	6.1	4.5	65.6	523	.0037	4.6	4.5	64.1
423+00										
	500	.0033	4.7	4.5	64.2	500	.0033	4.7	4.5	64.2
439+75										

SHEET 14 OF 20 C.A.P. CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
497+00										
	148	.0014	12.5	2.0	58.5	64	.0014	4.8	2.0	50.8
509+20										

SHEET 15 OF 20 WARNER ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
11+75										
	175	.0017	0.0	4.5	47.5	175	.0017	0.0	4.5	47.5
21+00										
	1028	.0026	15.6	4.5	75.1	403	.0037	4.5	4.0	61.0
46+00										
	681	.0031	8.2	4.5	67.7	271	.0040	3.4	3.5	56.9
80+00										
	623	.0033	6.8	4.5	66.3	248	.0043	2.6	3.5	56.1
110+00										
	572	.0035	5.7	4.5	66.2	228	.0045	2.0	3.5	55.5
151+89										

SHEET 15 OF 20 ELLSWORTH ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
151+89										
	524	.0036	4.7	4.5	64.2	210	.0048	1.4	3.5	54.9
178+00										
	366	.0039	3.5	4.0	60.0	147	.0049	1.4	3.0	51.9
194+00										

SHEET 16 OF 20 C.A.P. - ELLSWORTH - ADOBE CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
10+00										
	326	.005	0.4	4.5	59.9	127	.0055	0.6	3.0	51.1
21+32										
	*326	.005	7.0	4.5	35.0	127	.0112	2.7	4.5	30.7
34+75										
	223	.005	0.1	4.0	56.5	87	.0042	3.5	2.0	48.0
54+30										

*RECTANGULAR CHANNEL

SHEET 16 OF 20 UNNAMED WASH - C.A.P. TO SIGNAL BUTTE

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
100+00										
				NOT BEING IMPROVED						
114+20										
	435	.0022	7.7	4.0	52.2	354	.0040	3.2	4.0	59.7
117+80										
	520	.0037	4.5	4.5	64.0	354	.0040	3.2	4.0	59.7
124+30										
				NOT BEING IMPROVED						
135+65										
	520	.020	1.5	4.0	58.0	354	.0218	0.7	3.5	54.2
141+35										

SHEET 17 OF 20 CHOLLA ROAD CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
100+20										
	479	.0039	3.7	4.5	63.2	180	.0034	.01	4.0	56.5
132+30										
	287	.0046	1.5	4.0	61.0	108	.0055	.01	3.0	50.5
162+10										

SHEET 17 OF 20 — BROADWAY - SIGNAL BUTTE ROAD

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
11+55										
	881	.0028	12.4	4.5	71.9	308	.0053	.01	4.5	59.5
34+60										
	355	.0047	1.0	4.5	60.5	125	.0055	.05	3.0	51.0
61+00										
	255	.0045	1.9	3.5	55.4	78	.0060	.03	2.5	47.8
78+00										

SHEET 17 OF 20 — 4TH AVENUE CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
10+60										
	150	.0049	1.5	3.0	52.0	53	.0057	0.9	2.0	45.4
34+45										

SHEET 18 OF 20 — 12TH STREET CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
13+40										
	909	.0027	13.2	4.5	72.7	379	.0045	1.5	4.5	61.0
58+20										

SHEET 18 OF 20 — BROADWAY - MERIDIAN ROAD

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
12+90										
	676	.0026	16.2	3.5	69.7	280	.0034	6.7	3.0	57.2
37+40										

SHEET 18 OF 20 — SOUTHERN AVENUE CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
16+80										
	1480	.0023	25.4	4.5	84.9	585	.0034	6.0	4.5	65.5
56+00										

SHEET 19 OF 20 — SUPERSTITION FREEWAY CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
13+10										
	337	.0036	5.4	3.5	58.9	153	.0055	.01	3.4	53.2
55+40										
	200	.005	1.1	3.5	54.6	95	.004	.01	3.0	52.0
96+00										

102ND STREET CHANNEL

	50-YEAR					10-YEAR				
STATION	Q	S	b	d	R.O.W.	Q	S	b	d	R.O.W.
114+20										
	435	.0022	7.7	4.0	52.2	354	.004	3.2	4.0	47.7
117+80										
	136	.005	1.0	3.0	50.0	54	.006	.01	2.3	46.9
152+30										

Appendix I

Storm Drain-Basin Option

R.W.C.D. DISCHARGE COMPARISON TABLE
STORM DRAIN OPTION

LOCATION	SCS	CHANNEL OPTION*		STORM DRAIN OPTION			
R.W.C.D. FLOODWAY AT	DESIGN DISCHARGE (cfs)	HEC-1 CONCENTRATION POINT	100-YR cfs	HEC-1 CONCENTRATION POINT	10-YR cfs	5-YR cfs	2-YR cfs
Brown Rd.	1,160	Brown	391	C011	539	448	356
University Boulevard		UNIV	1,928	C034	1,047	792	549
Apache Trail	1,965	US60	1,994	C035	1,483	1,440	1,234
Broadway Road	2,290	BROAD(1)	2,499	C052	2,288	2,333	2,295
Southern Avenue	3,440	C030(2)	2,519	C064	2,601	2,357	2,056
Superstition Freeway	4,720	COFREE(3)	3,664	C071	4,197	3,942	3,658
Baseline Road	4,700	COBASE	3,796	C075	4,271	3,971	3,733
Guadalupe Road	4,860	COGUAD	4,739	C098	4,861	4,861	4,868
Elliot Road	5,110	COB117	5,108	C0145	5,111	5,106	5,097
Warner Road	5,280	C0127	5,213	C0153	5,289	5,285	5,189
Ray Road	5,890	C0130	5,756	C0160	5,868	5,901	5,871

* See HEC-1 Schematic, Exhibit 5, January, 1987 report.
(1) Flow in R.W.C.D. Floodway 1,800 Feet South of Broadway Road.
(2) Reduced Drainage Area and Flow to Southern Avenue due to proposed University channel system.
(3) Restrictive capacity of existing ADOT Superstition Freeway Channel West of Power Road limits inflow at Freeway.

The unit costs for the Storm Drains were taken from the East Side Stormwater Drainage Study for the City of Mesa (May 1, 1981) by Yost and Gardner Engineers. The pipe costs were updated as per Ameron Pipe Division 1987 prices. Also the manhole and the inlet costs were updated per ADOT 1986 bid prices.

The Total Best Condition price for pipes in non-asphalted streets and Total Cost in Built-Up Areas price were essentially the same as the 1981 Yost and Gardner Reports because pipe cost decreases were offset by the Inlet and Manhole cost increases. Therefore, the Yost and Gardner unit costs were used in this studies for cost estimating purposes.

The Storm Drain Costs are summarized in the Storm Drain Inventory.

REGIONAL BASIN INVENTORY
STORM DRAIN OPTION

LOCATION	BASIN DEPTH FEET	2-YEAR		5-YEAR		10-YEAR	
		VOLUME ACRE-FEET	AREA ACRES	VOLUME ACRE-FEET	AREA ACRES	VOLUME ACRE-FEET	AREA ACRES
Ellsworth & University	7.0	190	38	190	38	190	38
Brown & Crismon	10.5	457	62	457	62	457	62
SR 360 & C.A.P.	11.1	935	120	935	120	935	120
Power & University	6.5	0	0	0	0	88	19
Recker & University	6.5	162	35	97	21	71	16
Power & Broadway	8.0	16	3	91	16	118	21
72nd & Broadway	6.5	239	52	235	51	19	4
SR 360 & Ellsworth	12.0	245	29	245	29	246	29
SR 360 Power	8.0	126	22	82	15	54	10
Sossaman & Guadalupe	6.5	47	10	67	15	144	31
Elliot & Ellsworth	10.0	435	61	763	107	937	132
Elliot & R.W.C.D.	12.5	227	26	176	20	165	19
Ellsworth & General Motors	10.0	630	89	428	60	284	40
Warner & R.W.C.D.	8.5	0	0	52	9	73	12
R.W.C.D. & So. of Warner	8.5	308	51	248	41	190	32

REGIONAL BASIN INVENTORY
STORM DRAIN OPTION (Cont'd)

LOCATION	BASIN DEPTH FEET	2-YEAR		5-YEAR		10-YEAR	
		VOLUME ACRE-FEET	AREA ACRES	VOLUME ACRE-FEET	AREA ACRES	VOLUME ACRE-FEET	AREA ACRES
Signal Butte & Cholla	10.0	71	12	71	12	71	12
102nd St. ab Apache Trail	4.0	12	4.5	12	4.5	12	4.5
TOTAL		4100	614.5	4149	620.5	4095	608.5

$$\text{AREA} = \frac{\text{Volume}}{\text{depth}} \times 1.4^*$$

*1.4 is a 40% amplification factor to account for side slope and buffer area.

$$\text{EXCAVATION} = \frac{\text{Volume} \times 43560}{27} \times 1.25^*$$

*1.25 is a 25% amplification factor to account for overexcavation.

STORM DRAIN INVENTORY

SIZE	2-YEAR					5-YEAR					10-YEAR				
	IMPROVED		UNIMPROVED			IMPROVED		UNIMPROVED			IMPROVED		UNIMPROVED		
INCHES	LENGTH FT	UNIT COST $/FT	LENGTH FT	UNIT COST $/FT	COST $1000	LENGTH FT	UNIT COST $/FT	LENGTH FT	UNIT COST $/FT	COST $1000	LENGTH FT	UNIT COST $/FT	LENGTH FT	UNIT COST $/FT	COST $1000
12	7,350	41			301										
15			3,810	45	171										
18	13,400	61	5,280	45	1055										
21	18,850	71	5,280	53	1618	7,350	71			522					
24	12,980	82	5,280	60	1381						3,150	82			258
27	5,280	92	10,560	68	1200	6,200	92	3,810	68	830					
30	18,960	102	17,770	75	3267	11,630	102	5,280	75	1582	4,200	102			428
33	10,150	109			1106	6,500	109	5,280	81	1136			3,810	81	309
36	5,850	114	10,560	86	1575	15,620	114	5,280	86	2235	6,130	114	5,280	86	1153
39	18,520	119	5,280	89	2674	5,280	119	5,280	89	1098	3,800	119			452
42	3,480	129	10,560	98	1484	5,280	129			681	22,320	129	5,280	98	3397
48	13,680	143	19,540	110	4106	26,660	143	23,050	110	6348	10,340	143	10,560	110	2640
54	1,320	162			214	8,300	162	5,280	126	2010	5,280	162	5,280	126	1521
60						16,720	182	15,840	143	5308	31,940	182	12,490	143	7599
66						10,560	202	19,540	161	5279	4,650	202	10,560	161	2639
72						8,400	216	5,280	174	2733	23,010	216	10,560	174	6808
78						1,320	241			318	4,440	241	15,840	197	4191
84											5,280	257	14,260	213	4394
90											5,280	275			1452
				COST	$20,200,00				COST	$30,100,00				COST	$37,200,00

Appendix J

HEC-1 Input and Output - 2 year

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

  1           ID       SUPERSTITION FREEWAY  -  MULTI- FREQUENCY ANALYSIS    (EMF2)
  2           ID       EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
  3           ID       MARCH 1987   -  100-YEAR RAINFALL AND 2-YEAR PIPE SYSTEM
              *DIAGRAM
  4           IT      15                    120
  5           IO       6
  6           PB       1    3.65
  7           PB      10
  8           IN      30                     48
  9           PI   0.019   0.020   0.020   0.022   0.022   0.023   0.025   0.025   0.026   0.028
 10           PI   0.029   0.031   0.033   0.035   0.038   0.042   0.046   0.051   0.057   0.067
 11           PI   0.085   0.113   0.176   1.387   0.262   0.136   0.097   0.076   0.067   0.058
 12           PI   0.050   0.046   0.041   0.038   0.035   0.033   0.031   0.029   0.027   0.027
 13           PI   0.025   0.024   0.023   0.022   0.022   0.020   0.020   0.019

 14           KK   SUB02
 15           KM       LOCAL RUNOFF AT MC KELLIPS AND RECKER ROADS
 16           PR      10
 17           PW       1
 18           PT       1
 19           PW       1
 20           BA    0.50
 21           LS           83.5
 22           UK     110  0.0050    0.20     100
 23           RK    6000   0.015   0.035   0.084    TRAP    40.0    0.01
 24           RK    7700  0.0085   0.012           CIRC      24

 25           KK      D2
 26           KM       DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN CAPACITY
 27           DT     D25
 28           DI       0      19     300    3000
 29           DQ       0       0     281    2982

 30           KK      R2
 31           KM       ROUTE FLOWS FROM MC KELLIPS AND RECKER TO R.W.C.D. AT MC KELLIPS
 32           RK   10300  0.0110   0.012           CIRC      24

 33           KK      R3
 34           KM       ROUTE FLOWS FROM MC KELLIPS TO BROWN ALONG R.W.C.D.
 35           RK    6000  0.0001   0.030           TRAP      80     3.0

 36           KK   SUB04
 37           KM       LOCAL RUNOFF TO 0.5 MI. WEST OF BUSH HWY.
 38           PR      10
 39           PW       1
 40           PT       1
 41           PW       1
 42           BA    1.02
 43           LS           83.6
 44           UK     800   0.014   0.200     100
 45           RK    7000   0.014   0.035    0.17    TRAP    15.0     1.5
 46           RK    2640  0.0092   0.012           CIRC      24
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK      D4
  48          KM        DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN CAPACITY
  49          DT     D4S
  50          DI       0      26     300    3000
  51          DQ       0       0     274    2974

  52          KK      R4
  53          KM        ROUTE FLOWS FROM 0.5 MI. WEST OF POWER TO RECKER ROAD
  54          RK    2640  0.0080   0.012           CIRC      24

  55          KK   SUB06
  56          KM        LOCAL RUNOFF TO BROWN AND RECKER ROADS
  57          BA     0.5
  58          LS              84
  59          UK     200   0.005   0.200     100
  60          RK    2640   0.009   0.016   0.025    TRAP    40.0    0.01
  61          RK    5280   0.005   0.016            TRAP    60.0    0.01

  62          KK     C06
  63          KM        COMBINE FLOWS AT BROWN AND RECKER ROADS
  64          HC       2

  65          KK      D6
  66          KM        DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN PIPE CAPACITY
  67          DT     D6S
  68          DI       0      41     300    3000
  69          DQ       0       0     259    2959

  70          KK   RETD2
  71          KM        RETRIEVE FLOWS FROM D2
  72          DR     D2S

  73          KK     RD2
  74          KM        ROUTE D2S FLOW TO BROWN AND RECKER ROADS
  75          RK    5280   0.005   0.016            TRAP    40.0     0.01

  76          KK     C07
  77          KM        COMBINE FLOWS AT BROWN AND RECKER
  78          HC       2

  79          KK      R7
  80          KM        ROUTE FLOWS FROM RECKER TO HIGLEY ALONG BROWN
  81          RK    5280  0.0087   0.012           CIRC      30

  82          KK   SUB08
  83          KM        LOCAL RUNOFF TO BROWN AND HIGLEY ROADS
  84          BA    0.95
  85          LS              83
  86          UK     110   0.005   0.200     100
  87          RK    3090   0.008   0.016    0.16    TRAP    40.0    0.01
  88          RK    2800   0.015   0.200            TRAP     100      20
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 89           KK   BA508
 90           KM        BASIN FLOW 50-YEAR RETENTION
 91           RS      1    STOR     0.0
 92           SV      0      10      26      50      75
 93           SE      0       1    2.26    3.26     3.5
 94           SQ      0       2       5     800    1100

 95           KK     C08
 96           KM        COMBINE FLOWS AT HIGLEY AND BROWN
 97           HC      2

 98           KK      D8
 99           KM        DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
100           DT     DB5
101           DI      0      42     300    3000
102           DQ      0       0     258    2958

103           KK      R8
104           KM        ROUTE FLOWS FROM HIGLEY TO R.W.C.D.
105           RK    4400   0.008   0.012           CIRC      30

106           KK   SUB10
107           KM        LOCAL RUNOFF TO BROWN ROAD AND R.W.C.D.
108           BA    0.44
109           LS             85                      79
110           UK     110   0.005   0.200      65
111           UK    1325   0.010   0.200      35
112           RK    2600   0.005   0.016    0.11   TRAP      40    0.01
113           RK    4400   0.007   0.020           TRAP     100    0.01

114           KK    C010
115           KM        COMBINE FLOWS AT BROWN AND R.W.C.D.
116           HC      2

117           KK    C011
118           KM        COMBINE FLOWS IN R.W.C.D. AT BROWN ROAD
119           HC      2

120           KK     R11
121           KM        ROUTE FLOWS IN R.W.C.D. TO UNIVERSITY
122           RK    4550  0.0001   0.030           TRAP      80       3

123           KK   SUB12
124           KM        LOCAL RUNOFF TO R.W.C.D. AT UNIVERSITY
125           BA    0.61
126           LS           81.8
127           UK     110   0.005    0.20     100
128           RK    2800  0.0085   0.016    0.12   TRAP      40    0.01
129           RK    5800  0.0001   0.030           TRAP      80       3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  130         KK   CO12
  131         KM       COMBINE FLOWS IN R.W.C.D. U/S OF UNIVERSITY
  132         HC      2

  133         KK  SUB14
  134         KM       LOCAL RUNOFF TO ADOBE AND RECKER
  135         BA   0.25
  136         LS           84.5
  137         UK    350   0.005   0.200     100
  138         RK   2640  0.0076   0.030   0.035    TRAP    40.0    0.01
  139         RK   2640  0.0061   0.016            TRAP    40.0    0.01

  140         KK  RETD6S
  141         KM       RETRIEVE D6S FLOWS
  142         DR    D6S

  143         KK    RD6
  144         KM       ROUTE D6S FLOWS TO ADOBE
  145         RK   2640  0.0061   0.016            TRAP    40.0    0.01

  146         KK   CO14
  147         KM       COMBINE FLOWS AT ADOBE
  148         HC      2

  149         KK    D14
  150         KM       DIVERT FLOWS TO SOUTH ALONG RECKER ROAD
  151         DT   D14S
  152         DI      0     100    1000
  153         DQ      0      47     470

  154         KK    R14
  155         KM       ROUTE FLOWS ALONG ADOBE TO HIGLEY
  156         RK   5280  0.0076   0.016            TRAP    40.0    0.01

  157         KK  SUB16
  158         KM       LOCAL RUNOFF TO HIGLEY AND ADOBE
  159         BA    0.5
  160         LS            86
  161         UK    110   0.005    0.20     100
  162         RK   2640   0.005   0.016   0.125    TRAP    40.0    0.01
  163         RK   5280  0.0076   0.016            TRAP    40.0    0.01

  164         KK  BAS16
  165         KM       BASIN FOR 50-YEAR RETENTION
  166         RS      1    STOR       0
  167         SV      0      15      50     100     175
  168         SQ      0       1     2.6     3.6     4.0
  169         SE      0       2       5     800    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  170         KK   CO16
  171         KM       COMBINE FLOWS ALONG ADOBE AT HIGLEY
  172         HC      2

  173         KK  RETD8S
  174         KM       RETRIEVE D8S FLOWS
  175         DR    D8S

  176         KK    RD8
  177         KM       ROUTE D8S FLOW TO ADOBE
  178         RK   2640  0.0038   0.016           TRAP    40.0    0.01

  179         KK   CO17
  180         KM       COMBINE FLOW IN HIGLEY AT ADOBE
  181         HC      2

  182         KK    R17
  183         KM       ROUTE FLOWS ALONG HIGLEY TO UNIVERSITY
  184         RK   2640  0.0061   0.016           TRAP    40.0    0.01

  185         KK  SUB18
  186         KM       LOCAL FLOWS TO 1/8 MI EAST OF HAWES ALONG UNIVERSITY
  187         BA   0.28
  188         LS            83
  189         UK    350  0.0075   0.200     100
  190         RK   2000   0.015   0.050    0.03    TRAP      20      10
  191         RK   4000  0.0067   0.012           CIRC      18

  192         KK    D18
  193         KM       DIVERT FLOWS IN EXCESS OF 18" STORM DRAIN CAPACITY
  194         DT   D18S
  195         DI      0       8     134    2000
  196         DQ      0       0     126    1992

  197         KK    R18
  198         KM       ROUTE FLOWS TO 1/4 MI. WEST OF SOSSAMAN ROAD
  199         RK   7700  0.0053   0.012           CIRC      33

  200         KK  SUB20
  201         KM       LOCAL RUNOFF TO 1/4 MI WEST OF SOSSAMAN
  202         BA   0.98
  203         LS            83
  204         UK    350   0.014   0.200     100
  205         RK   5500   0.015   0.050    0.04    TRAP      20      10
  206         RK   7700  0.0053   0.012           CIRC      33

  207         KK   CO20
  208         KM       COMBINE FLOWS 1/8 MI WEST OF SOSSAMAN ROAD
  209         HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  210         KK     D20
  211         KM        DIVERT FLOWS IN EXCESS OF 33" PIPE
  212         DT    D20S
  213         DI      0      40    1240    3000
  214         DQ      0       0    1200    2960

  215         KK     R20
  216         KM        ROUTE FLOWS TO BUSH/POWER ROAD
  217         RK    4100  0.0046   0.012            CIRC      39

  218         KK   SUB22
  219         KM        LOCAL RUNOFF TO BUSH/POWER AND UNIVERSITY
  220         BA    0.75
  221         LS             83
  222         UK     350   0.014   0.200     100
  223         RK    7500  0.0147   0.050    0.08    TRAP      20      10
  224         RK    4100  0.0046   0.012            CIRC      39

  225         KK    CO22
  226         KM        COMBINE FLOWS AT BUSH/POWER AND UNIVERSITY
  227         HC       2

  228         KK     D22
  229         KM        DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN CAPACITY
  230         DT    D22S
  231         DI      0      62     770    3000
  232         DQ      0       0     708    2938

  233         KK    D22B
  234         KM        DIVERT FLOW IN EXCESS OF 48" PIPE (D/S) INTO REG. BASIN
  235         KO       3
  236         DT   RBAS1
  237         DI      0     150     300    3000
  238         DQ      0       0     150    2850

  239         KK     R22
  240         KM        ROUTE FLOWS TO 72ND STREET
  241         RK    2640  0.0058   0.012            CIRC      39

  242         KK   SUB24
  243         KM        LOCAL RUNOFF TO 72ND STREET AT UNIVERSITY
  244         BA    0.81
  245         LS           83.5
  246         UK     350   0.014   0.200     100
  247         RK   11000   0.011   0.050    0.05    TRAP      20      10
  248         RK    2640  0.0058   0.012            CIRC      39

  249         KK    CO24
  250         KM        COMBINE FLOWS AT 72ND STREET
  251         HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK     D24
 253          KM        DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN CAPACITY
 254          DT    D24S
 255          DI       0      70     450    3000
 256          DQ       0       0     380    2930

 257          KK     R24
 258          KM        ROUTE FLOWS TO RECKER ALONG UNIVERSITY
 259          RK    2640  0.0054   0.012           CIRC      48

 260          KK   SUB26
 261          KM        LOCAL RUNOFF TO RECKER AND UNIVERSITY
 262          BA    1.19
 263          LS           84.5
 264          UK     350    0.01   0.200     100
 265          RK   13700   0.012   0.050    0.20    TRAP      20      10
 266          RK    2640  0.0054   0.012           CIRC      48

 267          KK  RETD4S
 268          KM        RETRIEVE D4S FLOWS
 269          DR     D4S

 270          KK     RD4
 271          KM        ROUTE D4S FLOW TO UNIVERSITY
 272          RK    6760  0.0081   0.030           TRAP      32       4

 273          KK    CO26
 274          KM        COMBINE FOWS AT UNIVERSITY AND RECKER
 275          HC       2

 276          KK    CO27
 277          KM        COMBINE FLOWS AT UNIVERSITY AND RECKER
 278          HC       2

 279          KK     D28
 280          KM        DIVERT FLOWS INTO DETENTION BASIN (Q>48" PIPE)
 281          KD       3
 282          DT    D28B
 283          DI       0     100     680    3000
 284          DQ       0       0     580    2900

 285          KK  RED14S
 286          KM        RETRIEVE D14S FLOWS
 287          DR    D14S

 288          KK    RD14
 289          KM        ROUTE D14S FLOWS TO UNIVERSITY AND RECKER
 290          RK    2640  0.0061   0.016           TRAP      40    0.01
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 291          KK    CO28
 292          KM        COMBINE FLOWS AT UNIVERSITY AND RECKER
 293          HC       2

 294          KK     R28
 295          KM        ROUTE FLOWS TO 1/2 MI WEST OF RECKER
 296          RK    2640  0.0060   0.012            CIRC      48

 297          KK   SUB30
 298          KM        LOCAL RUNOFF TO 56TH STREET
 299          BA   0.055
 300          LS           85.5
 301          UK     110   0.005   0.200     100
 302          RK    1920   0.010   0.016   0.027    TRAP      40    0.01
 303          RK    2640  0.0060   0.012            CIRC      48

 304          KK    CO30
 305          KM        COMBINE FLOWS AT 56TH STREET
 306          HC       2

 307          KK     D30
 308          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
 309          DT    D30S
 310          DI       0     106     470    3000
 311          DQ       0       0     364    2894

 312          KK    RO30
 313          KM        ROUTE FLOWS TO HIGLEY ROAD
 314          RK    2640  0.0065   0.012            CIRC      48

 315          KK   SUB32
 316          KM        LOCAL RUNOFF TO UNIVERSITY AND HIGLEY
 317          BA    0.45
 318          LS             86
 319          UK     110   0.005   0.200     100
 320          RK    5280  0.0076   0.016   0.050    TRAP      40    0.01
 321          RK    2640  0.0056   0.016            TRAP      40    0.01

 322          KK    CO32
 323          KM        COMBINE FLOWS AT HIGLEY AND UNIVERSITY
 324          HC       2

 325          KK    CO33
 326          KM        COMBINE FLOWS AT HIGLEY AND UNIVERSITY (TOTAL)
 327          HC       2

 328          KK     D33
 329          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
 330          DT    D33S
 331          DI       0     125     570    3000
 332          DQ       0       0     445    2875
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  333         KK    R33
  334         KM       ROUTE FLOWS TO R.W.C.D. ALONG UNIVERSITY
  335         RK   1800  0.0069   0.012            CIRC     48

  336         KK   CO34
  337         KM       COMBINE FLOWS IN R.W.C.D. AT UNIVERSITY
  338         HC      2

  339         KK    R34
  340         KM       ROUTE R.W.C.D. FLOWS TO APACHE TRAIL
  341         RK   3340 0.00015   0.030            TRAP    110      3

  342         KK  RED33S
  343         KM       RETRIEVE D33S FLOWS
  344         DR   D33S

  345         KK  RD33S
  346         KM       ROUTE D33S FLOWS TO R.W.C.D. ALONG HIGLEY STORM DRAIN
  347         RK   2640  0.0061   0.012            CIRC     48

  348         KK   CO35
  349         KM       COMBINE FLOW IN R.W.C.D. AT APACHE TRAIL
  350         HC      2

  351         KK    R35
  352         KM       ROUTE R.W.C.D. FLOWS TO BROADWAY
  353         RK   2672  0.0003   0.027            TRAP     90      3

  354         KK  SUB36
  355         KM       LOCAL RUNOFF TO HAWES ROAD
  356         BA   0.94
  357         LS          85.3
  358         UK    300   0.006    0.20     100
  359         RK   5840  0.0086   0.026    0.10    TRAP     30    2.5
  360         RK   5280  0.0065   0.012            CIRC     30

  361         KK  RED18S
  362         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D18
  363         DR   D18S

  364         KK   RD18
  365         KM       ROUTE D18S FLOWS TO BROADWAY
  366         RK   5280  0.0091   0.016            TRAP     40   0.01

  367         KK   CO36
  368         KM       COMBINE FLOWS AT BROADWAY
  369         HC      2

  370         KK    D36
  371         KM       DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
  372         DT   D36S
  373         DI      0      39     290    3000
  374         DQ      0       0     251    2961
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 375          KK    R36
 376          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN ROAD
 377          RK   5280  0.0068   0.012           CIRC     39

 378          KK  SUB38
 379          KM       LOCAL RUNOFF TO SOSSAMAN ROAD
 380          BA   0.84
 381          LS          86.7
 382          UK    150   0.005   0.200     100
 383          RK   5680  0.0045   0.016    0.08   TRAP     40    0.01
 384          RK   5280  0.0068   0.012           CIRC     39

 385          KK   CD38
 386          KM       COMBINE FLOWS AT SOSSAMAN ROAD
 387          HC      2

 388          KK    D38
 389          KM       DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN CAPACITY
 390          DT   D38S
 391          DI      0      84     590    3000
 392          DQ      0       0     506    2916

 393          KK    R38
 394          KM       ROUTE FLOWS FROM 74TH STREET
 395          RK   3960  0.0068   0.012           CIRC     39

 396          KK  RED20S
 397          KM       RETRIEVE FLOWS FROM D20S
 398          DR   D20S

 399          KK   RD20
 400          KM       ROUTE D20S FLOWS TO 74TH STREET AND BROADWAY
 401          RK   5280   0.007   0.016           TRAP     40    0.01

 402          KK  SUB40
 403          KM       LOCAL RUNOFF TO 74TH STREET AND BROADWAY
 404          BA   0.77
 405          LS          85.6
 406          UK    260   0.006   0.200     100
 407          RK   7000  0.0069   0.025     0.1   TRAP     40    0.01
 408          RK   3960  0.0068   0.012           CIRC     48

 409          KK   CD40
 410          KM       COMBINE FLOWS IN SUB 40
 411          HC      2

 412          KK   CD41
 413          KM       COMBINE FLOWS AT 74TH STREET AND BROADWAY
 414          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  415         KK    D41
  416         KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
  417         DT   D41S
  418         DI      0     116     700    3000
  419         DQ      0       0     584    2884

  420         KK    R41
  421         KM       ROUTE FLOWS FROM 74TH STREET TO POWER ROAD
  422         RK   1320   0.005   0.012           CIRC     54

  423         KK  SUB42
  424         KM       LOCAL RUNOFF TO POWER AND BROADWAY
  425         BA   0.45
  426         LS           84.4
  427         UK    350   0.011   0.200     100
  428         RK   5500  0.0090   0.030     0.1   TRAP     20      10
  429         RK   1320   0.005   0.012           CIRC     54

  430         KK  RED22S
  431         KM       RETRIEVE DIVERTED FLOWS FROM D22
  432         DR   D22S

  433         KK   DR22
  434         KM       ROUTE D22S TO BROADWAY
  435         RK   5280  0.0056   0.016           TRAP     40    0.01

  436         KK   CO42
  437         KM       COMBINE FLOWS AT BROADWAY
  438         HC      2

  439         KK   CO43
  440         KM       COMBINE FLOWS AT POWER ROAD AND BROADWAY
  441         HC      2

  442         KK  DIV43S
  443         KM       DIVERT FLOWS IN EXCESS OF STORM DRAIN CAPACITY
  444         DT   D43S
  445         DI      0     135     250    3000
  446         DQ      0       0     115    2865

  447         KK   D43B
  448         KM       DIVERT FLOWS IN EXCESS OF 110 CFS INTO REG. BASIN
  449         KO      3
  450         DT  DBAS2
  451         DI      0     110     250    3000
  452         DQ      0       0     140    2890

  453         KK    R43
  454         KM       ROUTE FLOWS FROM POWER ROAD TO 64TH STREET
  455         RK   2640  0.0066   0.016           TRAP   12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 456          KK   SUB44
 457          KM        LOCAL RUNOFF TO BROADWAY
 458          BA    0.48
 459          LS            85.4
 460          UK     230   0.007   0.200     100
 461          RK    2640   0.011   0.016   0.044    TRAP      40    0.01
 462          RK    7900   0.006   0.016            TRAP      60    0.01

 463          KK  RED24S
 464          KM        RETRIEVE FLOWS DIVERTED FROM D24S
 465          DR    D24S

 466          KK    RD24
 467          KM        ROUTE D24S FLOWS TO BROADWAY
 468          RK    5280   0.006   0.016            TRAP      40    0.01

 469          KK    CO44
 470          KM        COMBINE FLOWS IN 64TH STREET
 471          HC       2

 472          KK    CO45
 473          KM        COMBINE FLOWS AT BROADWAY AND 64TH STREET
 474          HC       2

 475          KK     D45
 476          KM        DIVERT FLOWS INTO REGIONAL DETENTION BASIN
 477          KD       3
 478          DT    D45B
 479          DI       0       1    2120    3000
 480          DQ       0       0    2119    2999

 481          KK     R45
 482          KM        ROUTE FLOWS TO RECKER ROAD
 483          RK    2640  0.0066   0.016            TRAP    12.0     1.5

 484          KK   SUB48
 485          KM        LOCAL RUNOFF TO RECKER ROAD
 486          BA    0.52
 487          LS             86
 488          UK     150   0.007   0.200     100
 489          RK    2640   0.007   0.016    0.04    TRAP      40    0.01
 490          RK    5280   0.007   0.016            TRAP      60    0.01

 491          KK    CO49
 492          KM        COMBINE FLOWS AT RECKER AND BROADWAY
 493          HC       2

 494          KK     R49
 495          KM        ROUTE FLOWS FROM RECKER TO R.W.C.D.
 496          RK    3200  0.0066   0.016            TRAP    12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 497          KK  SUB50
 498          KM       LOCAL RUNOFF TO R.W.C.D. AND BROADWAY
 499          BA    1.0
 500          LS          85.6
 501          UK    110   0.005   0.200     100
 502          RK   5280  0.0056   0.016     0.2   TRAP     40    0.01
 503          RK   3200  0.0066   0.016           TRAP   12.0     1.5

 504          KK  RED30S
 505          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D30S
 506          DR   D30S

 507          KK   RD30
 508          KM       ROUTE FLOWS FROM D30S
 509          RK   5280  0.0056   0.016           TRAP     40    0.01

 510          KK   CO50
 511          KM       COMBINE FLOWS IN SUB50
 512          HC      2

 513          KK   CO51
 514          KM       COMBINE FLOWS IN BROADWAY AT R.W.C.D.
 515          HC      2

 516          KK   CO52
 517          KM       COMBINE FLOWS IN R.W.C.D. AT BROADWAY
 518          HC      2

 519          KK    R52
 520          KM       ROUTE FLOWS FROM BROADWAY TO FREEWAY ALONG R.W.C.D.
 521          RK   8870  0.0004   0.025           TRAP    120     3.0

 522          KK  SUB54
 523          KM       LOCAL RUNOFF TO R.W.C.D. AT FREEWAY  (LEISURE WORLD)
 524          BA   1.56
 525          LS          84.9
 526          UK    110   0.005   0.200     100
 527          RK   7300   0.006   0.070    0.20   TRAP     40    0.01
 528          RK   8870  0.0004   0.025           TRAP    120     3.0

 529          KK  RET30
 530          KM       BASIN FOR 50-YEAR RETENTION BASIN
 531          RS    1.0    STOR     0.0
 532          SV      0      25      61      67      75      78
 533          SE      0     1.3     2.6     3.1     3.6     3.7
 534          SQ      0       0       0     275     800     925

 535          KK   CO62
 536          KM       COMBINE FLOWS IN R.W.C.D. U/S OF FREEWAY
 537          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  538         KK   SUB56
  539         KM        LOCAL RUNOFF TO SOUTHERN AND 72ND
  540         BA    1.19
  541         LS           86.1
  542         UK     110   0.005    0.20     100
  543         RK    5280   0.004   0.026    0.12    TRAP     120       5
  544         RK    3650  0.0064   0.012            CIRC      36

  545         KK  RET38S
  546         KM        RETRIEVE DIVERTED FLOWS FROM D38S
  547         DR    D38S

  548         KK    RO38
  549         KM        ROUTE FLOWS TO SOUTHERN THROUGH SUB56
  550         RK    8000  0.0049   0.026            TRAP     120       5

  551         KK    CO56
  552         KM        COMBINE FLOWS AT SOUTHERN AND 72ND STREET
  553         HC       2

  554         KK     D56
  555         KM        DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
  556         DT    D56S
  557         DI       0      57     480    3000
  558         DQ       0       0     423    2943

  559         KK  RET41S
  560         KM        RETRIEVE FLOWS DIVERTED FROM D41S
  561         DR    D41S

  562         KK    RD41
  563         KM        ROUTE D41S FLOWS TO SOUTHERN IN 72ND STREET
  564         RK    5280   0.004   0.016            TRAP      40    0.01

  565         KK    CO57
  566         KM        COMBINE FLOW AT 72ND AND SOUTHERN
  567         HC       2

  568         KK     D57
  569         KM        DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
  570         DT    D57S
  571         DI       0      57     600    3000
  572         DQ       0       0     543    2943

  573         KK     R57
  574         KM        ROUTE FLOWS FROM 72ND ST. TO POWER ROAD
  575         RK    2200  0.0075   0.012            CIRC      36

  576         KK  RET43S
  577         KM        RETRIEVE DIVERTED FLOWS FROM D43S
  578         DR    D43S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  579         KK   RD43
  580         KM      ROUTE DIVERTED FLOWS TO POWER ROAD AND SOUTHERN
  581         RK   6600  0.0030   0.035           TRAP     200      10

  582         KK  SUB58
  583         KM       LOCAL RUNOFF TO POWER ROAD AND SOUTHERN
  584         BA   0.38
  585         LS          84.7
  586         UK    110   0.005   0.200     100
  587         RK   6600   0.003   0.035    0.12   TRAP     200      10
  588         RK   2200  0.0075   0.012           CIRC      36

  589         KK   CO58
  590         KM       COMBINE FLOWS IN SUB 58
  591         HC      2

  592         KK   CO59
  593         KM       COMBINE FLOWS IN POWER ROAD
  594         HC      2

  595         KK    D59
  596         KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
  597         DT   D59S
  598         DI      0      62     680    3000
  599         DQ      0       0     618    2938

  600         KK    R59
  601         KM       ROUTE FLOWS FROM POWER ROAD TO R.W.C.D.
  602         RK   6500  0.0054   0.012           CIRC      39

  603         KK   CO64
  604         KM       COMBINE FLOWS IN R.W.C.D. AT SOUTHERN
  605         HC      2

  606         KK    R64
  607         KM       ROUTE R.W.C.D. FLOWS TO FREEWAY
  608         RK   3170  0.0004   0.025           TRAP     120     3.0

  609         KK  SUB66
  610         KM       LOCAL RUNOFF TO FREEWAY AND 72ND STREET
  611         BA   0.31
  612         LS          83.8
  613         UK    350   0.006   0.200     100
  614         RK   1600   0.008   0.035    0.03   TRAP       2       4
  615         RK   3200   0.004   0.016           TRAP      10       4

  616         KK  RET56S
  617         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D56S
  618         DR   D56S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 619          KK   RD56
 620          KM       ROUTE DIVERTED FLOWS TO FREEWAY
 621          RK   1600   0.008   0.035            TRAP      2       4

 622          KK   CO66
 623          KM       COMBINE FLOWS AT FREEWAY AND 72ND STREET
 624          HC      2

 625          KK  RET57S
 626          KM       RETRIEVE DIVERTED FLOWS FROM D57S
 627          DR   D57S

 628          KK   RD57
 629          KM       ROUTE FLOWS TO FREEWAY
 630          RK   1600   0.008   0.035            TRAP      2       4

 631          KK   CO67
 632          KM       COMBINE FLOWS IN FREEWAY AT 72ND
 633          HC      2

 634          KK    R67
 635          KM       ROUTE FLOWS IN FREEWAY TO POWER ROAD
 636          RK   2400   0.004   0.016            TRAP     10       4

 637          KK   SUB68
 638          KM       LOCAL RUNOFF TO POWER ROAD
 639          BA   1.19
 640          LS           84.3
 641          UK    300   0.007    0.20     100
 642          RK   1600   0.008   0.030    0.02    TRAP     11       3
 643          RK   2750   0.004   0.016            TRAP     12       4

 644          KK  RET59S
 645          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D59S
 646          DR   D59S

 647          KK   RD59
 648          KM       ROUTE D59S FLOWS TO FREEWAY
 649          RK   1600   0.008   0.030            TRAP     11     3.0

 650          KK   CO68
 651          KM       COMBINE FLOW IN SUB68
 652          HC      2

 653          KK   CO69
 654          KM       COMBINE FLOWS AT FREEWAY AND POWER ROAD
 655          HC      2

 656          KK  DIVSUP
 657          KM       DIVERT FLOW INTO PEAK DIVERSION BASINS IN SR360 ROW
 658          KO      3
 659          DT  SUPBAS
 660          DI      0    1500    3000
 661          DQ      0       0    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  662         KK    R69
  663         KM       ROUTE FLOWS FROM POWER ROAD TO R.W.C.D. IN FREEWAY
  664         RK   5280  0.0015   0.016           TRAP    12.0     2.0

  665         KK   SUB70
  666         KM       LOCAL RUNOFF TO R.W.C.D. AND FREEWAY
  667         BA   0.42
  668         LS          76.3
  669         UK   1300   0.002   0.050     100
  670         RK   2640   0.003   0.035    0.11    TRAP      10       3
  671         RK   5280  0.0015   0.016           TRAP      12       2

  672         KK   CO70
  673         KM       COMBINE FLOWS AT R.W.C.D. IN FREEWAY CHANNEL
  674         HC      2

  675         KK   CO71
  676         KM       COMBINE FLOWS IN R.W.C.D.  AND FREEWAY
  677         HC      2

  678         KK    R71
  679         KM       ROUTE R.W.C.D. FLOWS TO BASELINE
  680         RK   1600  0.0003   0.025           TRAP     140   3.0

  681         KK   SUB72
  682         KM       LOCAL RUNOFF TO POWER AND BASELINE
  683         BA   0.61
  684         LS          80.3
  685         UK    870   0.006   0.200     100
  686         RK   2500  0.0020   0.040    0.04    TRAP       2       4
  687         RK   6200  0.0050   0.012           CIRC      18

  688         KK    D72
  689         KM       DIVERT FLOWS IN EXCESS OF 18" STORM DRAIN
  690         DT   D72S
  691         DI      0       7     420    3000
  692         DQ      0       0     413    2993

  693         KK    R72
  694         KM       ROUTE FLOWS TO R.W.C.D.
  695         RK   3200  0.0050   0.012           CIRC      18

  696         KK   SUB74
  697         KM       LOCAL RUNOFF TO R.W.C.D. AND BASELINE
  698         BA   0.51
  699         LS             75
  700         UK    870   0.006   0.200     100
  701         RK   2500  0.0020   0.040    0.04    TRAP       2       4
  702         RK   3200  0.0050   0.012           CIRC      18
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  703         KK   C074
  704         KM       COMBINE FLOWS AT R.W.C.D. IN BASELINE
  705         HC      2

  706         KK   C075
  707         KM       COMBINE FLOWS IN R.W.C.D. AT BASELINE
  708         HC      2

  709         KK    R75
  710         KM       ROUTE FLOWS FROM BASELINE TO GUADALUPE
  711         RK   6070  0.0003   0.025           TRAP    140     3.0

  712         KK   SUB76
  713         KM       LOCAL RUNOFF TO GUADALUPE IN R.W.C.D.
  714         BA   0.29
  715         LS            75
  716         UK     50   0.006   0.025    100
  717         RK   1000   0.005   0.025   0.005   TRAP      2       2
  718         RK   6070  0.0003   0.025           TRAP    140       3

  719         KK   C076
  720         KM       COMBINE FLOWS IN R.W.C.D. U/S OF GUADALUPE
  721         HC      2

  722         KK   SUB78
  723         KM       LOCAL RUNOFF TO 0.75 MI WEST OF ELLSWORTH
  724         BA   0.14
  725         LS            83
  726         UK    700   0.010   0.200    100
  727         RK   1300   0.007   0.025   0.02   TRAP     40    0.01
  728         RK   3150  0.0065   0.012          CIRC     12

  729         KK    D78
  730         KM       DIVERT FLOWS IN EXCESS OF 12" STORM DRAIN CAPACITY
  731         DT   D78S
  732         DI      0       3     250    3000
  733         DQ      0       0     247    2997

  734         KK    R78
  735         KM       ROUTE FLOWS TO HAWES
  736         RK   2130  0.0065   0.012          CIRC     21

  737         KK   SUB80
  738         KM       LOCAL RUNOFF TO HAWES
  739         BA   0.86
  740         LS          84.1
  741         UK   1600  0.0075   0.200    100
  742         RK   8300   0.008   0.082   0.15   TRAP     40    0.01
  743         RK   2130  0.0065   0.012          CIRC     21
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  744         KK  RET36S
  745         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D36S
  746         DR   D36S

  747         KK   RD36
  748         KM       ROUTE FLOWS D36S TO SOUTHERN
  749         RK   5280  0.0070   0.016           TRAP     15     1.5

  750         KK   CO80
  751         KM       COMBINE FLOWS AT HAWES
  752         HC      2

  753         KK   CO81
  754         KM       COMBINE FLOWS AT HAWES AND SOUTHERN
  755         HC      2

  756         KK    D81
  757         KM       DIVERT FLOWS IN EXCESS OF 21" STORM DRAIN CAPACITY
  758         DT   D81S
  759         DI      0      13     490    3000
  760         DQ      0       0     477    2987

  761         KK    R81
  762         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  763         RK   4000  0.0065   0.012           CIRC     30

  764         KK  SUB82
  765         KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND SOUTHERN
  766         BA   0.43
  767         LS           85.1
  768         UK    110   0.005   0.200     100
  769         RK   2600  0.0038   0.016    0.05   TRAP     40    0.01
  770         RK   4000  0.0065   0.012           CIRC     30

  771         KK   CO82
  772         KM       COMBINE FLOWS AT SOSSAMAN CHANNEL AND SOUTHERN
  773         HC      2

  774         KK    R82
  775         KM       ROUTE FLOWS FROM SOUTHERN TO FREEWAY
  776         RK   2200  0.0045   0.030           TRAP     25     1.5

  777         KK  SUB84
  778         KM       LOCAL RUNOFF TO HAWES AND THE FREEWAY
  779         BA   0.35
  780         LS           86.2
  781         UK    500   0.010   0.200     100
  782         RK   3000  0.0087   0.040    0.05   TRAP    2.0     4.0
  783         RK   5280   0.004   0.016           TRAP    5.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 784          KK  RET78S
 785          KM       RETRIEVE DIEVERTED HYDROGRAPH FROM D78S
 786          DR    D78S

 787          KK    DR78
 788          KM       ROUTE D78S FLOWS TO FREEWAY
 789          RK    3000  0.0087   0.040            TRAP     2.0     4.0

 790          KK    CO84
 791          KM       COMBINE FLOWS AT HAWES
 792          HC      2

 793          KK  RET81S
 794          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D81S
 795          DR    D81S

 796          KK    RD81
 797          KM       ROUTE D81S FLOWS TO FREEWAY
 798          RK    3100  0.0061   0.016            TRAP      40    0.01

 799          KK    CO83
 800          KM       COMBINE FLOWS AT HAWES
 801          HC      2

 802          KK     R85
 803          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 804          RK    5280   0.004   0.016            TRAP      28       4

 805          KK   SUB86
 806          KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND FREEWAY
 807          BA    0.46
 808          LS            86.2
 809          UK     150   0.005   0.200     100
 810          RK    3100  0.0061   0.016   0.035    TRAP      40    0.01
 811          RK    4350   0.004   0.016            TRAP      28       4

 812          KK   RET86
 813          KM       BASIN FOR 50 YEAR RETENTION
 814          RS       1    STOR       0
 815          SV       0       7    17.5      22      27      28
 816          SE       0     1.3     2.6     3.1     3.6     3.7
 817          SQ       0       0       0      70     200     240

 818          KK    CO86
 819          KM       COMBINE FLOWS AT SOSSAMAN IN FREEWAY
 820          HC      2

 821          KK    CO87
 822          KM       COMBINE FLOWS IN SOSSAMAN AT FREEWAY
 823          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  824         KK     R87
  825         KM        ROUTE FLOWS FROM FREEWAY TO BASELINE
  826         RK    3800  0.0040   0.030           TRAP      50     3.0

  827         KK   SUB88
  828         KM        LOCAL RUNOFF TO HAWES AND BASELINE
  829         BA    0.53
  830         LS            75
  831         UK     967  0.0065   0.200     100
  832         RK    2300  0.0087   0.040    0.13   TRAP       2       4
  833         RK    4200   0.006   0.012           CIRC      12

  834         KK     D88
  835         KM        DIVERT FLOWS IN EXCESS OF 12" STORM DRAIN CAPACITY
  836         DT    D88S
  837         DI       0       2     440    3000
  838         DQ       0       0     438    2998

  839         KK     R88
  840         KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  841         RK    5000   0.006   0.012           CIRC      21

  842         KK   SUB90
  843         KM        LOCAL RUNOFF TO SOSSAMAN CHANNEL
  844         BA    0.47
  845         LS           86.3
  846         UK     967  0.0065   0.200     100
  847         RK    2300  0.0087   0.040    0.13   TRAP       2       4
  848         RK    5000   0.006   0.012           CIRC      21

  849         KK    C090
  850         KM        COMBINE FLOWS AT SOSSAMAN IN BASELINE
  851         HC       2

  852         KK    C091
  853         KM        COMBINE FLOWS IN SOSSAMAN AT BASELINE
  854         HC       2

  855         KK     R91
  856         KM        ROUTE FLOWS IN SOSSAMAN TO GUADALUPE
  857         RK    5300   0.038   0.030           TRAP      50     3.0

  858         KK   SUB92
  859         KM        LOCAL TO GUADALUPE
  860         BA     1.0
  861         LS           81.6
  862         UK    1750   0.005   0.200     100
  863         RK    4950  0.0051   0.040   0.072   TRAP     2.0     4.0
  864         RK    5290  0.0055   0.012           CIRC      18
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  865         KK  RET88S
  866         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D88S
  867         DR    D88S

  868         KK    RD88
  869         KM       ROUTE D88S TO GUADALUPE
  870         RK    5280  0.0051   0.040           TRAP     2.0     4.0

  871         KK    CO92
  872         KM       COMBINE FLOWS AT GUADALUPE AND HAWES
  873         HC      2

  874         KK     D92
  875         KM       DIVERT FLOWS IN EXCESS OF 18" STORM DRAIN CAPACITY
  876         DT    D92S
  877         DI      0       9     420    3000
  878         DQ      0       0     411    2991

  879         KK     R92
  880         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  881         RK    5280  0.0045   0.012           CIRC      27

  882         KK   SUB94
  883         KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND GUADALUPE
  884         BA    0.96
  885         LS           80.1
  886         UK     930   0.005   0.200     100
  887         RK    4950  0.0051   0.028    0.09    TRAP      21       2
  888         RK    5280  0.0045   0.012            CIRC      27

  889         KK    CO94
  890         KM       COMBINE FLOWS AT SOSSAMAN AND GUADALUPE
  891         HC      2

  892         KK     D94
  893         KM       DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN CAPACITY
  894         DT    D94S
  895         DI      0      19     900    3000
  896         DQ      0       0     781    2981

  897         KK    CO95
  898         KM       COMBINE FLOWS IN SOSSAMAN AT GUADALUPE
  899         HC      2

  900         KK  DIVGUA
  901         KM       DIVERT FLOWS INTO REGIONAL BASIN AT GUADALUPE AND SOSSAMAN
  902         KO      3
  903         DT  GUABAS
  904         DI      0     835    2250    3000
  905         DQ      0       0    1415    2165
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  906         KK    R95
  907         KM       ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D. ALONG GUADALUPE
  908         RK   5280  0.0048   0.016           TRAP    15.0     1.5

  909         KK  SUB96
  910         KM       LOCAL RUNOFF TO POWER AND GUADALUPE
  911         BA   1.04
  912         LS            75
  913         UK   1750   0.006   0.200     100
  914         RK   5000   0.005   0.040    0.07    TRAP       2       4
  915         RK   5280  0.0048   0.016           TRAP    15.0     1.5

  916         KK   CO96
  917         KM       COMBINE FLOWS IN GUADALUPE AT POWER
  918         HC      2

  919         KK  RET72
  920         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D72S
  921         DR   D72S

  922         KK   DR72
  923         KM       ROUTE D72S FLOWS TO GUADALUPE CHANNEL
  924         RK   5280  0.0022   0.035           TRAP       2       4

  925         KK   CO97
  926         KM       COMBINE FLOWS AT POWER AND GUADALUPE CHANNEL
  927         HC      2

  928         KK   CO98
  929         KM       COMBINE FLOWS IN R.W.C.D. AT GUADALUPE
  930         KO      3
  931         HC      2

  932         KK    R98
  933         KM       ROUTE R.W.C.D. FLOWS FROM GUADALUPE TO ELLIOT
  934         KO      3
  935         RK   5250  0.0003  0.0270           TRAP     140     3.0

  936         KK  SUB100
  937         KM       LOCAL RUNOFF TO ELLSWORTH AND APACHE TRAIL
  938         PR     10
  939         PW      1
  940         PT      1
  941         PW      1
  942         BA   0.82
  943         LS           86.5
  944         UK    150   0.005   0.200     100
  945         RK   3400  0.0088   0.016    0.12    TRAP      40    0.01
  946         RK   5280  0.0023   0.016           TRAP      23     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  947         KK  SUB102
  948         KM       LOCAL RUNOFF TO ELLSWORTH AT BROADWAY
  949         BA    0.18
  950         LS           87.2
  951         UK     150   0.005   0.200     100
  952         RK    1000   0.004   0.020    0.02   TRAP     40    0.01
  953         RK    5280  0.0066   0.012           CIRC     21

  954         KK   CO102
  955         KM       COMBINE FLOWS AT BROADWAY AND ELLSWORTH
  956         HC       2

  957         KK    R102
  958         KM       ROUTE FLOWS FROM BROADWAY TO SOUTHERN
  959         RK    5280  0.0023   0.016           TRAP   25.0     1.5

  960         KK  SUB104
  961         KM       LOCAL RUNOFF TO 0.67 MI SO. OF BROADWAY
  962         BA    0.55
  963         LS           86.3
  964         UK     150   0.005   0.200     100
  965         RK    2500   0.005   0.016    0.05   TRAP   40.0    0.01
  966         RK    5650  0.0071   0.035           TRAP     15     3.0

  967         KK   CO104
  968         KM       COMBINE FLOWS IN ELLSWORTH AT SOUTHERN
  969         HC       2

  970         KK  SUB106
  971         KM       LOCAL RUNOFF TO CRISMON AND BASELINE
  972         BA     1.0
  973         LS            83
  974         UK    1000   0.010   0.200     100
  975         RK    2750   0.018   0.040    0.05   TRAP   20.0     4.0
  976         RK    5280  0.0064   0.012           CIRC     24

  977         KK    D106
  978         KM       DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN CAPACITY
  979         DT   D106S
  980         DI       0      19     250    3000
  981         DQ       0       0     231    2981

  982         KK    R106
  983         KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH
  984         RK    5280   0.006   0.012           CIRC     30

  985         KK  SUB108
  986         KM       LOCAL RUNOFF TO SOUTHERN AND ELLSWORTH
  987         BA    0.45
  988         LS           85.3
  989         UK     150   0.005   0.200     100
  990         RK    2800   0.007   0.025    0.05   TRAP     20       2
  991         RK    5280   0.006   0.012           CIRC     30
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  992         KK   CO108
  993         KM        COMBINE FLOWS IN SOUTHERN AVE
  994         HC       2

  995         KK    D108
  996         KM        DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
  997         DT   D108S
  998         DI       0      38     440    3000
  999         DQ       0       0     402    2962

 1000         KK   CO109
 1001         KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT SOUTHERN
 1002         HC       2

 1003         KK    R109
 1004         KM        ROUTE FLOWS FROM SOUTHERN TO FREEWAY
 1005         RK    2300  0.0022   0.016            TRAP      25     1.5

 1006         KK  SUB110
 1007         KM       LOCAL RUNOFF TO FREEWAY AT CRISMON
 1008         BA    0.77
 1009         LS              85
 1010         UK    1250   0.010   0.200     100
 1011         RK    2300   0.009   0.040   0.015    TRAP     2.0     4.0
 1012         RK   10360   0.004   0.016            TRAP    10.0     2.0

 1013         KK  RET106
 1014         KM        RETRIEVE DIVERTED HYDROGRAPH FROM SOUTHERN
 1015         DR   D106S

 1016         KK   RD106
 1017         KM        ROUTE D106S FLOWS TO FREEWAY
 1018         RK    2300   0.009   0.014            TRAP     2.0     4.0

 1019         KK   CO110
 1020         KM        COMBINE FLOWS AT CRISMON IN FREEWAY
 1021         HC       2

 1022         KK    R110
 1023         KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
 1024         RK    5280   0.004   0.016            TRAP      16       2

 1025         KK  RET108
 1026         KM        RETRIEVE DIVERTED HYDROGRAPH FROM D108S
 1027         DR   D108S

 1028         KK   RD106
 1029         KM        ROUTE FLOWS DIVERTED FROM D108S TO FREEWAY
 1030         RK    2500   0.007   0.040            TRAP     2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1031          KK   CO111
1032          KM        COMBINE FLOWS IN FREEWAY CHANNEL
1033          HC       2

1034          KK  SUB112
1035          KM        LOCAL RUNOFF TO FREEWAY AT ELLSWORTH
1036          BA    0.47
1037          LS              83
1038          UK    1250   0.010   0.200     100
1039          RK    2500   0.007   0.040    0.05    TRAP     2.0     4.0
1040          RK    5280   0.004   0.016            TRAP    16.0     2.0

1041          KK   CO112
1042          KM        COMBINE FLOWS IN FREEWAY
1043          HC       2

1044          KK   CO113
1045          KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT FREEWAY
1046          HC       2

1047          KK  DIVELB
1048          KM        DIVERT FLOW INTO REGIONAL BASIN AT ELLSWORTH AND SR 360
1049          KO       3
1050          DT  ELBBAS
1051          DI       0     250     500    3000
1052          DQ       0       0     250    2750

1053          KK    R113
1054          KM        ROUTE FLOWS FROM FREEWAY TO BASELINE
1055          RK    3190  0.0022   0.016            TRAP    25.0     1.5

1056          KK  SUB114
1057          KM        LOCAL RUNOFF TO SIGNAL BUTTE AND BASELINE
1058          BA    0.70
1059          LS              83
1060          UK    1000   0.008   0.200     100
1061          RK    3200   0.012   0.040   0.046    TRAP     2.0     4.0
1062          RK    5280   0.005   0.012            CIRC      21

1063          KK    D114
1064          KM        DIVERT FLOWS IN EXCESS OF 21" STORM DRAIN CAPACITY
1065          DT   D114S
1066          DI       0      12     220    3000
1067          DQ       0       0     208    2988

1068          KK    R114
1069          KM        ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON ALONG BASELINE
1070          RK    5280   0.005   0.012            CIRC      27
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1071          KK  SUB116
1072          KM       LOCAL RUNOFF TO CRISMON AND BASELINE
1073          BA    0.58
1074          LS             83
1075          UK     500   0.008   0.200     100
1076          RK    3600   0.012   0.040   0.058    TRAP     2.0     4.0
1077          RK    5280   0.005   0.012            CIRC      27

1078          KK   CO116
1079          KM       COMBINE FLOWS AT CRISMON IN BASELINE
1080          HC       2

1081          KK    D116
1082          KM       DIVERT FLOWS IN EXCESS OF 27" STORM DRAIN CAPACITY
1083          DT   D116S
1084          DI       0      26     400    3000
1085          DQ       0       0     374    2974

1086          KK    R116
1087          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG BASELINE
1088          RK    6300  0.0067   0.012           CIRC      30

1089          KK  SUB118
1090          KM       LOCAL RUNOFF TO ELLSWORTH
1091          BA    0.62
1092          LS             82
1093          UK     500   0.010   0.200     100
1094          RK    3000  0.0087   0.040   0.050    TRAP     2.0     4.0
1095          RK    6300  0.0067   0.012            CIRC      30

1096          KK   CO118
1097          KM       COMBINE FLOWS AT ELLSWORTH IN BASELINE
1098          HC       2

1099          KK    D118
1100          KM       DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
1101          DT   D118S
1102          DI       0      37     760    3000
1103          DQ       0       0     723    2963

1104          KK   CO119
1105          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT BASELINE
1106          HC       2

1107          KK    R119
1108          KM       ROUTE FLOWS FROM BASELINE TO GUADALUPE IN ELLSWORTH CHANNEL
1109          RK    5280  0.0026   0.016            TRAP    15.0     1.5

1110          KK  SUB120
1111          KM       LOCAL RUNOFF TO U/S OF CAP OVERCHUTES
1112          BA    0.88
1113          LS             83
1114          UK     350   0.010   0.200     100
1115          RK    3400  0.0147   0.04    0.040    TRAP     2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1116          RK    3900  0.0005   0.035           TRAP     5.0     3.0

1117          KK    R120
1118          KM        ROUTE FLOWS FROM SUB120 TO MERIDIAN AND GUADALUPE
1119          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1120          KK  SUB122
1121          KM        LOCAL RUNOFF TO MERIDIAN AND GUADALUPE
1122          BA    0.71
1123          LS             83
1124          UK     750   0.008    0.20     100
1125          RK    3500  0.0086   0.040    0.05    TRAP     2.0     4.0
1126          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1127          KK   CO122
1128          KM        COMBINE FLOWS AT MERIDIAN AND GUADALUPE
1129          HC       2

1130          KK    R122
1131          KM        ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG GUADALUPE
1132          RK    5280   0.006   0.012           CIRC      36

1133          KK  SUB124
1134          KM        LOCAL RUNOFF TO GUADALUPE AND SIGNAL BUTTE
1135          BA     1.0
1136          LS             83
1137          UK     750   0.008   0.200     100
1138          RK    4100  0.0061   0.040     0.1    TRAP     2.0     4.0
1139          RK    5280   0.006   0.012           CIRC      36

1140          KK   CO124
1141          KM        COMBINE FLOW IN GUADALUPE AT SIGNAL BUTTE
1142          HC       2

1143          KK  RET114
1144          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D114S
1145          DR   D114S

1146          KK   RD114
1147          KM        ROUTE D114S FLOW TO GUADALUPE
1148          RK    5280   0.006   0.040           TRAP     2.0     4.0

1149          KK   CO125
1150          KM        COMBINE FLOW AT SIGNAL BUTTE IN GUADALUPE
1151          HC       2

1152          KK    D125
1153          KM        DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
1154          DT   D125S
1155          DI       0      62     570    3000
1156          DQ       0       0     508    2938
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1157          KK    R125
1158          KM        ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1159          RK    5280   0.006   0.012            CIRC      39

1160          KK  SUB126
1161          KM        LOCAL RUNOFF TO CRISMON AND GUADALUPE
1162          BA     1.0
1163          LS              83
1164          UK    1100   0.007   0.200     100
1165          RK    3000  0.0083   0.040   0.040    TRAP     2.0     4.0
1166          RK    5280   0.006   0.012            CIRC      39

1167          KK   CO126
1168          KM        COMBINE FLOWS IN GUADALUPE AT CRISMON
1169          HC       2

1170          KK  RET116
1171          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D116S
1172          DR   D116S

1173          KK   RD116
1174          KM        ROUTE D116S FLOWS TO GUADALUPE
1175          RK    5280   0.008   0.040            TRAP     2.0     4.0

1176          KK   CO127
1177          KM        COMBINE FLOWS IN CRISMON AT GUADALUPE
1178          HC       2

1179          KK    D127
1180          KM        DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN
1181          DT   D127S
1182          DI       0      76     780    3000
1183          DQ       0       0     704    2924

1184          KK    R127
1185          KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG GUADALUPE
1186          RK    5280   0.005   0.012            CIRC      42

1187          KK  SUB128
1188          KM        LOCAL RUNOF TO ELLSWORTH AND GUADALUPE
1189          BA     1.0
1190          LS            74.7
1191          UK    1500   0.005   0.200     100
1192          RK    4500  0.0067   0.035   0.37     TRAP     2.0     3.0
1193          RK    5280   0.005   0.012            CIRC      42

1194          KK   CO128
1195          KM        COMBINE FLOWS IN GUADALUPE AT ELSWORTH
1196          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1197          KK  RET118
1198          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D118S
1199          DR   D118S

1200          KK   RD118
1201          KM       ROUTE D118S FLOWS TO GUADALUPE
1202          RK    5280  0.0067   0.035           TRAP     2.0     3.0

1203          KK   CO129
1204          KM       COMBINE FLOWS IN GUADALUPE AT ELLSWORTH
1205          HC       2

1206          KK    D129
1207          KM       DIVERT FLOWS IN EXCESS OF 42" SOUTH DRAIN CAPACITY
1208          DT   D129S
1209          DI       0      77     800    3000
1210          DQ       0       0     723    2923

1211          KK  COE129
1212          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT GUADALUPE
1213          HC       2

1214          KK   RE129
1215          KM       ROUTE FLOWS FROM GUADALUPE TO ELLIOT IN ELLSWORTH CHANNEL
1216          RK    5280  0.0022   0.016           TRAP    26.0     1.5

1217          KK  SUB130
1218          KM       LOCAL RUNOFF TO MERIDIAN
1219          BA     2.0
1220          LS             83
1221          UK    1500   0.009   0.200     100
1222          RK    4800   0.009   0.040    0.06    TRAP     2.0     4.0
1223          RK    5000  0.0045   0.035           TRAP    10.0     3.0

1224          KK    R130
1225          KM       ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG ELLIOT
1226          RK    5280   0.006   0.012           CIRC      36

1227          KK  SUB132
1228          KM       LOCAL RUNOFF TO SIGNAL BUTTE AND ELLIOT
1229          BA     1.2
1230          LS             83
1231          UK     750   0.008   0.200     100
1232          RK    4100   0.006   0.040    0.06    TRAP     2.0     4.0
1233          RK    5280   0.006   0.012           CIRC      36

1234          KK   CO132
1235          KM       COMBINE FLOW AT ELLIOT AND SIGNAL BUTTE
1236          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1237          KK  RET125
1238          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D125S
1239          DR   D125S

1240          KK   RD125
1241          KM       ROUTE D125S FLOWS TO ELLIOT
1242          RK    5280  0.0038   0.035            TRAP     2.0     4.0

1243          KK   CO133
1244          KM       COMBINE FLOWS AT SIGNAL BUTTE AT ELLIOT
1245          HC       2

1246          KK    D133
1247          KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
1248          DT   D133S
1249          DI       0      51     460    3000
1250          DQ       0       0     409    2949

1251          KK    R133
1252          KM       ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1253          RK    5280  0.0050   0.012            CIRC     42

1254          KK  SUB134
1255          KM       LOCAL RUNOFF TO ELLIOT AT CRISMON
1256          BA     1.0
1257          LS              83
1258          UK     750   0.008   0.200     100
1259          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1260          RK    5280  0.0050   0.012            CIRC     42

1261          KK   CO134
1262          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1263          HC       2

1264          KK  RET127
1265          KM       RETREIVE DIVERTED HYDROGRAPH FROM GUADALUPE
1266          DR   D127S

1267          KK   RD127
1268          KM       ROUTE DIVERTED FLOWS FROM D127S TO ELLIOT
1269          RK    5280   0.008   0.040            TRAP     2.0     4.0

1270          KK   CO135
1271          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1272          HC       2

1273          KK    D135
1274          KM       DIVERT FLOWS IN EXCESS OF 42" STORM DRAIN CAPACITY
1275          DT   D135S
1276          DI       0      73     720    3000
1277          DQ       0       0     647    2927
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HEC-1 INPUT

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

1278          KK    R135
1279          KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
1280          RK    5280  0.0050   0.012            CIRC     48

1281          KK  SUB136
1282          KM        LOCAL RUNOFF TO ELLSWORTH AND ELLIOT
1283          BA     1.0
1284          LS              83
1285          UK     750   0.008   0.200     100
1286          RK    4500   0.008   0.040    0.05   TRAP     2.0     4.0
1287          RK    5280  0.0050   0.012            CIRC     48

1288          KK   CO136
1289          KM        COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1290          HC       2

1291          KK  RET129
1292          KM        RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1293          DR   D129S

1294          KK   RD129
1295          KM        ROUTE D129S FLOWS TO ELLIOT
1296          RK    5280   0.004   0.035            TRAP     2.0     4.0

1297          KK   CO137
1298          KM        COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1299          HC       2

1300          KK    D137
1301          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
1302          DT   D137S
1303          DI       0      93     920    3000
1304          DQ       0       0     827    2907

1305          KK  COE137
1306          KM        COMBINE FLOWS IN ELLIOT AT ELLSWORTH
1307          HC       2

1308          KK  DIVELS
1309          KM        DIVERT FLOWS INTO ELLSWORTH REGIONAL BASIN
1310          KO       3
1311          DT  ELSBAS
1312          DI       0      42      84    3000
1313          DQ       0       0      42    2958

1314          KK    R138
1315          KM        ROUTE FLOWS FROM ELLSWORTH TO HAWES ALONG ELLIOT
1316          RK    5280  0.0025   0.016            TRAP    18.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1317          KK  SUB140
1318          KM       LOCAL RUNOFF TO HAWES AND ELLIOT
1319          BA    1.0
1320          LS            B3
1321          UK    750   0.008   0.200     100
1322          RK   4500   0.008   0.040    0.05   TRAP    2.0     4.0
1323          RK   5280  0.0025   0.016           TRAP   18.0     1.5

1324          KK   CO140
1325          KM       COMBINE FLOWS AT HAWES AND ELLIOT
1326          HC      2

1327          KK  RET92S
1328          KM       RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1329          DR   D92S

1330          KK   RD92
1331          KM       ROUTE D92S FLOWS TO ELLIOT
1332          RK   5280   0.004   0.035           TRAP    2.0     4.0

1333          KK   CO141
1334          KM       COMBINE FLOWS AT HAWES AND ELLIOT
1335          HC      2

1336          KK   R141
1337          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN
1338          RK   5280  0.0023   0.016           TRAP   25.0     1.5

1339          KK  SUB142
1340          KM       LOCAL RUNOFF TO SOSSAMAN AND ELLIOT
1341          BA    1.0
1342          LS            B2
1343          UK    750   0.008   0.200     100
1344          RK   4500   0.008   0.040    0.02   TRAP    2.0     4.0
1345          RK   5280  0.0025   0.016           TRAP   25.0     1.5

1346          KK   CO142
1347          KM       COMBINE FLOWS AT SOSSAMAN IN ELLIOT
1348          HC      2

1349          KK   RET94
1350          KM       RETRIEVE DIVERTED FLOWS D94S
1351          DR   D94S

1352          KK   RD94
1353          KM       ROUTE D94S FLOWS TO ELLIOT
1354          RK   5280   0.004   0.035           TRAP    2.0     4.0

1355          KK   CO143
1356          KM       COMBINE FLOWS AT POWER
1357          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1358          KK    R143
1359          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1360          RK    3700  0.0021   0.016            TRAP    35.0     1.5

1361          KK  SUB144
1362          KM        LOCAL RUNOFF TO R.W.C.D. AND ELLIOT
1363          BA    0.75
1364          LS              75
1365          UK    1250   0.006   0.200     100
1366          RK    5000  0.0036   0.040   0.050    TRAP     2.0     4.0
1367          RK    3700  0.0021   0.016            TRAP    35.0     1.5

1368          KK   CO144
1369          KM        COMBINE FLOWS AT R.W.C.D. IN ELLIOT
1370          HC       2

1371          KK  DIVELL
1372          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D. CAP. INTO REG. BASIN
1373          KO       3
1374          DT  ELLBAS
1375          DI       0     230     750    3050
1376          DQ       0       0     520    2820

1377          KK   CO145
1378          KM        COMBINE FLOWS IN R.W.C.D. AT ELLIOT
1379          HC       2

1380          KK    R145
1381          KM        ROUTE R.W.C.D. FLOWS FROM ELLIOT TO WARNER
1382          RK    6030  0.0003   0.025            TRAP   150.0     3.0

1383          KK  RET133
1384          KM        RETRIEVE D133S FLOWS
1385          DR   D133S

1386          KK   RD133
1387          KM        ROUTE FLOWS TO CRISMON IN CHANNEL IN SO. ELLIOT ROW
1388          RK    5280  0.0043   0.035            TRAP    25.0     2.0

1389          KK  RET135
1390          KM        RETRIEVE D135S FLOWS
1391          DR   D135S

1392          KK   CO135
1393          KM        COMBINE FLOWS IN SO. ELLIOT ROW CHANNEL
1394          HC       2

1395          KK   RD135
1396          KM        ROUTE FLOWS TO ELLSWORTH IN SO ELLIOT ROW CHANNEL
1397          RK    5280  0.0043   0.035            TRAP    25.0     2.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1398          KK  RET137
1399          KM        RETRIEVE D137S FLOWS
1400          DR   D137S

1401          KK  CDD137
1402          KM        COMBINE FLOW IN ELLIOT SD ROW CHANNEL
1403          HC       2

1404          KK   DIVGM
1405          KM        DIVERT FLOW INTO REGIONAL BASIN AT G.M. AND ELLIOT
1406          KO       3
1407          DT   GMBAS
1408          DI       0     250     500    3500
1409          DQ       0       0     250    3250

1410          KK   RD137
1411          KM        ROUTE FLOWS TO WARNER AND HAWES
1412          RK    7000  0.0046   0.035            TRAP    10.0     4.0

1413          KK  SUB147
1414          KM        LOCAL RUNOFF TO HAWES AND WARNER
1415          BA     1.0
1416          LS              82
1417          UK     750   0.008   0.200     100
1418          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1419          RK    5280   0.004   0.012            CIRC      48

1420          KK   CD147
1421          KM        COMBINE FLOWS AT HAWES IN WARNER
1422          HC       2

1423          KK  SUB148
1424          KM        LOCAL RUNOFF TO ELLSWORTH AND WARNER
1425          BA    2.66
1426          LS              83
1427          UK    1500   0.007   0.200     100
1428          RK    1500  0.0067   0.040    0.02    TRAP     2.0     4.0
1429          RK    8000  0.0053   0.035            TRAP     5.0     4.0

1430          KK    R148
1431          KM        ROUTE FLOWS FROM ELLSWORTH AND HAWES
1432          RK    5280   0.004   0.012            CIRC      48

1433          KK   CD148
1434          KM        COMBINE FLOWS AT HAWES AND WARNER
1435          HC       2

1436          KK    D148
1437          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
1438          DT   D148S
1439          DI       0      53     600    3000
1440          DQ       0       0     547    2947
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1441          KK   R149
1442          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN
1443          RK   5280  0.0048   0.012            TRAP      48

1444          KK  SUB150
1445          KM        LOCAL RUNOFF TO SOSSAMAN
1446          BA    1.0
1447          LS             80
1448          UK    750   0.008   0.200     100
1449          RK   4500   0.007   0.040    0.05    TRAP     2.0     4.0
1450          RK   5280  0.0048   0.012            CIRC      48

1451          KK   CO150
1452          KM        COMBINE FLOWS AT SOSSAMAN IN WARNER
1453          HC       2

1454          KK   D150
1455          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
1456          DT   D150S
1457          DI       0      65     800    3000
1458          DQ       0       0     735    2935

1459          KK   R150
1460          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1461          RK   3700  0.0047   0.012            CIRC      48

1462          KK  SUB152
1463          KM        LOCAL RUNOFF TO R.W.C.D. AT WARNER
1464          BA   0.70
1465          LS             78
1466          UK    250   0.007   0.200     100
1467          RK   5000  0.0043   0.040    0.05    TRAP     2.0     4.0
1468          RK   3700  0.0047   0.016            CIRC      48

1469          KK   CO152
1470          KM        COMBINE FLOWS AT R.W.C.D. AT WARNER
1471          HC       2

1472          KK  DIVWAR
1473          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D. CAP. AT WARNER
1474          KO       3
1475          DT  WARBAS
1476          DI       0     450    1000    3000
1477          DQ       0       0     550    2550

1478          KK   CO153
1479          KM        COMBINE FLOWS IN R.W.C.D. AT WARNER
1480          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1481          KK    R153
1482          KM        ROUTE R.W.C.D. FLOWS TO SUB15B
1483          RK    2200  0.0003   0.025           TRAP   170.0     3.0

1484          KK  SUB154
1485          KM        LOCAL RUNOFF TO HAWES
1486          BA    0.49
1487          LS              83
1488          UK    1100   0.006   0.200     100
1489          RK    2000   0.005   0.040    0.05   TRAP     2.0     4.0
1490          RK    5800  0.0043   0.035           TRAP    10.0     4.0

1491          KK  RET148
1492          KM        RETRIEVE DIVERTED FLOWS FROM D148S
1493          DR   D148S

1494          KK   RD148
1495          KM        ROUTE D148S FLOWS ALONG SOSSAMAN TO SO OF WARNER
1496          RK    2000   0.005   0.040           TRAP     2.0     4.0

1497          KK   CO154
1498          KM        COMBINE FLOWS AT HAWES
1499          HC       2

1500          KK    R154
1501          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN
1502          RK    5400  0.0043   0.035           TRAP    10.0     4.0

1503          KK  SUB156
1504          KM        LOCAL RUNOFF TO SOSSAMAN SO OF WARNER
1505          BA    0.73
1506          LS              83
1507          UK    1100   0.006   0.200     100
1508          RK    3000   0.005   0.040    0.05   TRAP     2.0     4.0
1509          RK    5400  0.0043   0.035           TRAP    10.0     4.0

1510          KK   CO156
1511          KM        COMBINE FLOW AT SOSSAMAN
1512          HC       2

1513          KK  RET150
1514          KM        RETRIEVE DIVERTED FLOWS D150S
1515          DR   D150S

1516          KK   RD150
1517          KM        ROUTE D150S FLOWS TO SO OF WARNER ALONG SOSSAMAN
1518          RK    3000   0.005   0.040           TRAP     2.0     4.0

1519          KK   CO157
1520          KM        COMBINE FLOWS AT SOSSAMAN
1521          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1522          KK    R157
1523          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1524          RK    3800  0.0043   0.035            TRAP    10.0     4.0

1525          KK  SUB158
1526          KM        LOCAL RUNOFF TO R.W.C.D. AT SO OF WARNER
1527          BA    0.70
1528          LS              78
1529          UK    1100   0.006   0.200     100
1530          RK    1500   0.005   0.040    0.05    TRAP     2.0     4.0
1531          RK    3800  0.0043   0.035            TRAP    10.0     4.0

1532          KK   CO158
1533          KM        COMBINE FLOWS IN CHANNEL SO OF WARNER AT R.W.C.D.
1534          HC       2

1535          KK  DIVARR
1536          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D. INTO BASIN ABOVE RAY RD.
1537          KO       3
1538          DT  ARRBAS
1539          DI       0     475    1200    3000
1540          DQ       0       0     725    2525

1541          KK   CO159
1542          KM        COMBINE FLOWS IN R.W.C.D. SO OF WARNER
1543          HC       2

1544          KK    R159
1545          KM        ROUTE R.W.C.D. FLOWS TO RAY ROAD
1546          RK    3600  0.0003   0.025            TRAP   170.0     3.0

1547          KK  SUB160
1548          KM        LOCAL RUNOFF TO R.W.C.D. AT RAY
1549          BA    1.55
1550          LS              83
1551          UK     250   0.004   0.200     100
1552          RK   14000  0.0045   0.040    0.20    TRAP     2.0     4.0
1553          RK    3600  0.0003   0.025            TRAP   170.0     3.0

1554          KK   CO160
1555          KM        COMBINE FLOWS IN R.W.C.D. AT RAY ROAD
1556          HC       2
1557          ZZ
```

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

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

  14       SUB02
               .
               .
  27           .------->    D2S
  25          D2
               V
               V
  30          R2
               V
               V
  33          R3
               .
               .
  36           .       SUB04
               .          .
               .          .
  49           .          .------->    D4S
  47           .         D4
               .          V
               .          V
  52           .         R4
               .          .
               .          .
  55           .          .      SUB06
               .          .          .
               .          .          .
  62           .        C06............
               .          .
               .          .
  67           .          .------->    D6S
  65           .         D6
               .          .
               .          .
  72           .          .          .<-------     D2S
  70           .          .      RETD2
               .          .          V
               .          .          V
  73           .          .        RD2
               .          .          .
               .          .          .
  76           .        C07............
               .          V
               .          V
  79           .         R7
               .          .
               .          .
  82           .          .      SUB08
               .          .          V
               .          .          V
  89           .          .      BAS08
               .          .          .
               .          .          .
  95           .        C08............
```

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            .          .
            .          .
100         .          .-------> D8S
 98         .         D8
            .          V
            .          V
103         .         R8
            .          .
            .          .
106         .          .      SUB10
            .          .          .
            .          .          .
114         .       CD10............
            .          .
            .          .
117      CD11............
            V
            V
120       R11
            .
            .
123         .      SUB12
            .          .
            .          .
130      CD12............
            .
            .
133         .      SUB14
            .          .
            .          .
142         .          .          .<-------     D6S
140         .          .     RETD6S
            .          .          V
            .          .          V
143         .          .        RD6
            .          .          .
            .          .          .
146         .       CD14............
            .          .
            .          .
151         .          .-------> D14S
149         .        D14
            .          V
            .          V
154         .        R14
            .          .
            .          .
157         .          .      SUB16
            .          .          V
            .          .          V
164         .          .      BAS16
            .          .          .
            .          .          .
170         .       CD16............
            .          .
            .          .
175         .          .          .<-------     D8S
173         .          .     RETD8S
            .          .          V
            .          .          V
```

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176          .          .        RDB
             .          .         .
             .          .         .
179          .       CD17............
             .         V
             .         V
182          .        R17
             .          .
             .          .
185          .          .      SUB18
             .          .         .
             .          .         .
194          .          .         .-------->   D18S
192          .          .        D18
             .          .         V
             .          .         V
197          .          .        R18
             .          .         .
             .          .         .
200          .          .         .      SUB20
             .          .         .          .
             .          .         .          .
207          .          .      CD20............
             .          .         .
             .          .         .
212          .          .         .-------->   D20S
210          .          .        D20
             .          .         V
             .          .         V
215          .          .        R20
             .          .         .
             .          .         .
218          .          .         .      SUB22
             .          .         .          .
             .          .         .          .
225          .          .      CD22............
             .          .         .
             .          .         .
230          .          .         .-------->   D22S
228          .          .        D22
             .          .         .
             .          .         .
236          .          .         .-------->   RBAS1
233          .          .      D22B
             .          .         V
             .          .         V
239          .          .        R22
             .          .         .
             .          .         .
242          .          .         .      SUB24
             .          .         .          .
             .          .         .          .
249          .          .      CD24............
             .          .         .
             .          .         .
254          .          .         .-------->   D24S
252          .          .        D24
             .          .         V
             .          .         V
257          .          .        R24
```

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                .         .         .
                .         .         .
260             .         .         .      SUB26
                .         .         .         .
                .         .         .         .
269             .         .         .         .          .<-------     D4S
267             .         .         .         .     RETD4S
                .         .         .         .         V
                .         .         .         .         V
270             .         .         .         .        RD4
                .         .         .         .         .
                .         .         .         .         .
273             .         .         .      CD26............
                .         .         .         .
                .         .         .         .
276             .         .      CD27............
                .         .         .
                .         .         .
282             .         .         .------->    D28B
279             .         .      D28
                .         .         .
                .         .         .
287             .         .         .         .<-------    D14S
285             .         .         .     RED14S
                .         .         .         V
                .         .         .         V
288             .         .         .      RD14
                .         .         .         .
                .         .         .         .
291             .         .      CD28............
                .         .         V
                .         .         V
294             .         .      R28
                .         .         .
                .         .         .
297             .         .         .      SUB30
                .         .         .         .
                .         .         .         .
304             .         .      CD30............
                .         .         .
                .         .         .
309             .         .         .------->    D30S
307             .         .      D30
                .         .         V
                .         .         V
312             .         .      RD30
                .         .         .
                .         .         .
315             .         .         .      SUB32
                .         .         .         .
                .         .         .         .
322             .         .      CD32............
                .         .         .
                .         .         .
325             .      CD33............
                .         .
                .         .
330             .         .------->    D33S
328             .      D33
                .         V
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```
            .          V
333         .        R33
            .          .
            .          .
336       CD34............
            V
            V
339        R34
            .
            .
344         .          .<-------    D33S
342         .     RED33S
            .          V
            .          V
345         .      RD33S
            .          .
            .          .
348       CD35............
            V
            V
351        R35
            .
            .
354         .      SUB36
            .          .
            .          .
363         .          .          .<-------    D18S
361         .          .     RED18S
            .          .          V
            .          .          V
364         .          .       RD18
            .          .          .
            .          .          .
367         .        CD36............
            .          .
            .          .
372         .          .------->    D36S
370         .        D36
            .          V
            .          V
375         .        R36
            .          .
            .          .
378         .          .      SUB38
            .          .          .
            .          .          .
385         .        CD38............
            .          .
            .          .
390         .          .------->    D38S
388         .        D38
            .          V
            .          V
393         .        R38
            .          .
            .          .
398         .          .          .<-------    D20S
396         .          .     RED20S
            .          .          V
            .          .          V
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399          .          .        RD20
             .          .          .
             .          .          .
402          .          .          .        SUB40
             .          .          .          .
             .          .          .          .
409          .          .        CD40............
             .          .          .
             .          .          .
412          .        CD41............
             .          .
             .          .
417          .          .-------> D41S
415          .        D41
             .         V
             .         V
420          .        R41
             .          .
             .          .
423          .          .        SUB42
             .          .          .
             .          .          .
432          .          .          .          .<-------   D22S
430          .          .          .      RED22S
             .          .          .          V
             .          .          .          V
433          .          .          .       DR22
             .          .          .          .
             .          .          .          .
436          .          .        CD42............
             .          .          .
             .          .          .
439          .        CD43............
             .          .
             .          .
444          .          .-------> D43S
442          .      DIV43S
             .          .
             .          .
450          .          .-------> DBA52
447          .        D43B
             .         V
             .         V
453          .        R43
             .          .
             .          .
456          .          .        SUB44
             .          .          .
             .          .          .
465          .          .          .          .<-------   D24S
463          .          .          .      RED24S
             .          .          .          V
             .          .          .          V
466          .          .          .       RD24
             .          .          .          .
             .          .          .          .
469          .          .        CD44............
             .          .          .
             .          .          .
472          .        CD45............
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            .          .
            .          .
478         .          .-------> D45B
475         .        D45
            .          V
            .          V
481         .        R45
            .          .
            .          .
484         .          .      SUB48
            .          .          .
            .          .          .
491         .       CD49............
            .          V
            .          V
494         .        R49
            .          .
            .          .
497         .          .      SUB50
            .          .          .
            .          .          .
506         .          .          .          .<-------   D30S
504         .          .          .     RED30S
            .          .          .          V
            .          .          .          V
507         .          .          .       RD30
            .          .          .          .
            .          .          .          .
510         .          .       CD50............
            .          .          .
            .          .          .
513         .       CD51............
            .          .
            .          .
516       CD52............
            V
            V
519        R52
            .
            .
522         .      SUB54
            .          V
            .          V
529         .      RET30
            .          .
            .          .
535       CD62............
            .
            .
538         .      SUB56
            .          .
            .          .
547         .          .          .<-------   D38S
545         .          .      RET38S
            .          .          V
            .          .          V
548         .          .       RD38
            .          .          .
            .          .          .
551         .       CD56............
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          .          .
          .          .
556       .          .-------> D56S
554       .        D56
          .          .
          .          .
561       .          .         .<-------   D41S
559       .          .     RET41S
          .          .         V
          .          .         V
562       .          .       RD41
          .          .         .
          .          .         .
565       .       CD57............
          .          .
          .          .
570       .          .-------> D57S
568       .        D57
          .          V
          .          V
573       .        R57
          .          .
          .          .
578       .          .         .<-------   D43S
576       .          .     RET43S
          .          .         V
          .          .         V
579       .          .       RD43
          .          .         .
          .          .         .
582       .          .         .      SUB58
          .          .         .          .
          .          .         .          .
589       .          .       CD58............
          .          .         .
          .          .         .
592       .       CD59............
          .          .
          .          .
597       .          .-------> D59S
595       .        D59
          .          V
          .          V
600       .        R59
          .          .
          .          .
603     CD64............
          V
          V
606     R64
          .
          .
609       .      SUB66
          .          .
          .          .
618       .          .         .<-------   D56S
616       .          .     RET56S
          .          .         V
          .          .         V
619       .          .       RD56
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622          CD66............
                 .
                 .
627              .<-------    D57S
625              .     RET57S
                 .        V
                 .        V
628              .      RD57
                 .        .
                 .        .
631          CD67............
                 V
                 V
634          R67
                 .
                 .
637              .      SUB68
                 .        .
                 .        .
646              .        .<-------    D59S
644              .     RET59S
                 .        V
                 .        V
647              .      RD59
                 .        .
                 .        .
650              .     CD68............
                 .        .
                 .        .
653          CD69............
                 .
                 .
659              .------> SUPBAS
656          DIVSUP
                 V
                 V
662          R69
                 .
                 .
665              .      SUB70
                 .        .
                 .        .
672          CD70............
                 .
                 .
675      CD71............
             V
             V
678      R71
             .
             .
681          SUB72
                 .
                 .
690              .------>    D72S
688          D72
                 V
                 V
```

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693          .        R72
             .         .
             .         .
696          .         .      SUB74
             .         .         .
             .         .         .
703          .       C074............
             .         .
             .         .
706       C075............
            V
            V
709        R75
             .
             .
712          .      SUB76
             .         .
             .         .
719       C076............
             .
             .
722          .      SUB78
             .         .
             .         .
731          .         .-------> D78S
729          .        D78
             .         V
             .         V
734          .        R78
             .         .
             .         .
737          .         .      SUB80
             .         .         .
             .         .         .
746          .         .         .         .<-------   D36S
744          .         .         .     RET36S
             .         .         .          V
             .         .         .          V
747          .         .         .       RD36
             .         .         .          .
             .         .         .          .
750          .         .       C080............
             .         .         .
             .         .         .
753          .       C081............
             .         .
             .         .
758          .         .-------> D81S
756          .        D81
             .         V
             .         V
761          .        R81
             .         .
             .         .
764          .         .      SUB82
             .         .         .
             .         .         .
771          .       C082............
             .         V
             .         V
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774          .        R82
             .          .
             .          .
777          .          .      SUB84
             .          .          .
             .          .          .
786          .          .          .          .<-------    D78S
784          .          .          .     RET78S
             .          .          .          V
             .          .          .          V
787          .          .          .       DR78
             .          .          .          .
             .          .          .          .
790          .          .       CD84............
             .          .          .
             .          .          .
795          .          .          .          .<-------    DB1S
793          .          .          .     RET81S
             .          .          .          V
             .          .          .          V
796          .          .          .       RD81
             .          .          .          .
             .          .          .          .
799          .          .       CD83............
             .          .          V
             .          .          V
802          .          .        R85
             .          .          .
             .          .          .
805          .          .          .      SUB86
             .          .          .          V
             .          .          .          V
812          .          .          .      RET86
             .          .          .          .
             .          .          .          .
818          .          .       CD86............
             .          .          .
             .          .          .
821          .        CD87............
             .          V
             .          V
824          .        R87
             .          .
             .          .
827          .          .      SUB88
             .          .          .
             .          .          .
836          .          .          .------->    DB8S
834          .          .        D88
             .          .          V
             .          .          V
839          .          .        R88
             .          .          .
             .          .          .
842          .          .          .      SUB90
             .          .          .          .
             .          .          .          .
849          .          .       CD90............
             .          .          .
             .          .          .
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852          .        CD91............
             .          V
             .          V
855          .        R91
             .          .
             .          .
858          .          .       SUB92
             .          .          .
             .          .          .
867          .          .          .          .<-------    D88S
865          .          .          .     RET88S
             .          .          .          V
             .          .          .          V
868          .          .          .       RD88
             .          .          .          .
             .          .          .          .
871          .          .        CD92.......L....
             .          .          .
             .          .          .
876          .          .          .------->   D92S
874          .          .        D92
             .          .          V
             .          .          V
879          .          .        R92
             .          .          .
             .          .          .
882          .          .          .      SUB94
             .          .          .          .
             .          .          .          .
889          .          .        CD94............
             .          .          .
             .          .          .
894          .          .          .------->   D94S
892          .          .        D94
             .          .          .
             .          .          .
897          .        CD95............
             .          .
             .          .
903          .          .------->  GUABAS
900          .      DIVGUA
             .          V
             .          V
906          .        R95
             .          .
             .          .
909          .          .       SUB96
             .          .          .
             .          .          .
916          .        CD96............
             .          .
             .          .
921          .          .          .<-------    D72S
919          .          .       RET72
             .          .          V
             .          .          V
922          .          .        DR72
             .          .          .
             .          .          .
925          .        CD97............
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928   CD98.............
      V
      V
932   R98
936   SUB100
947   SUB102
954   CD102............
      V
      V
957   R102
960   SUB104
967   CD104............
970   SUB106
979                     .-------> D106S
977   D106
      V
      V
982   R106
985   SUB108
992   CD108............
997                     .-------> D108S
995   D108
1000  CD109............
      V
      V
1003  R109
1006  SUB110
1015                    .<------- D106S
1013  RET106
      V
      V
1016  RD106
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                .         .         .         .
                .         .         .         .
1019            .         .      CD110............
                .         .         V
                .         .         V
1022            .         .       R110
                .         .         .
                .         .         .
1027            .         .         .         .<-------   D108S
1025            .         .         .     RET108
                .         .         .         V
                .         .         .         V
1028            .         .         .      RD106
                .         .         .         .
                .         .         .         .
1031            .         .      CD111............
                .         .         .
                .         .         .
1034            .         .         .     SUB112
                .         .         .         .
                .         .         .         .
1041            .         .      CD112............
                .         .         .
                .         .         .
1044            .      CD113............
                .         .
                .         .
1050            .         .------->  ELBBA5
1047            .     DIVELB
                .         V
                .         V
1053            .       R113
                .         .
                .         .
1056            .         .     SUB114
                .         .         .
                .         .         .
1065            .         .         .------->   D114S
1063            .         .       D114
                .         .         V
                .         .         V
1068            .         .       R114
                .         .         .
                .         .         .
1071            .         .         .     SUB116
                .         .         .         .
                .         .         .         .
1078            .         .      CD116............
                .         .         .
                .         .         .
1083            .         .         .------->   D116S
1081            .         .       D116
                .         .         V
                .         .         V
1086            .         .       R116
                .         .         .
                .         .         .
1089            .         .         .     SUB118
                .         .         .         .
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1096          .          .      CD118............
              .          .          .
              .          .          .
1101          .          .          .-------> D118S
1099          .          .      D118
              .          .          .
              .          .          .
1104          .      CD119............
              .         V
              .         V
1107          .      R119
              .          .
              .          .
1110          .          .     SUB120
              .          .         V
              .          .         V
1117          .          .      R120
              .          .          .
              .          .          .
1120          .          .          .     SUB122
              .          .          .          .
              .          .          .          .
1127          .          .      CD122............
              .          .         V
              .          .         V
1130          .          .      R122
              .          .          .
              .          .          .
1133          .          .          .     SUB124
              .          .          .          .
              .          .          .          .
1140          .          .      CD124............
              .          .          .
              .          .          .
1145          .          .          .          .<-------   D114S
1143          .          .          .     RET114
              .          .          .          V
              .          .          .          V
1146          .          .          .      RD114
              .          .          .          .
              .          .          .          .
1149          .          .      CD125............
              .          .          .
              .          .          .
1154          .          .          .-------> D125S
1152          .          .      D125
              .          .         V
              .          .         V
1157          .          .      R125
              .          .          .
              .          .          .
1160          .          .          .     SUB126
              .          .          .          .
              .          .          .          .
1167          .          .      CD126............
              .          .          .
              .          .          .
1172          .          .          .          .<-------   D116S
1170          .          .          .     RET116
              .          .          .          V
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                                  V
1173                           RD116
                                   .
                                   .
1176                      CD127............
                                   .
                                   .
1181                               .-------> D127S
1179                       D127
                             V
                             V
1184                       R127
                                   .
                                   .
1187                               .     SUB128
                                   .        ' '
                                   .          .
1194                      CD128............
                                   .
                                   .
1199                               .          .<-------   D118S
1197                               .     RET118
                                   .          V
                                   .          V
1200                               .      RD118
                                   .          .
                                   .          .
1203                      CD129............
                                   .
                                   .
1208                               .-------> D129S
1206                       D129
                                   .
                                   .
1211                  CDE129............
                            V
                            V
1214                   RE129
                                   .
                                   .
1217                      SUB130
                                   .
                                   .
1224                       R130
                                   .
                                   .
1227                               .     SUB132
                                   .          .
                                   .          .
1234                       CD132............
                                   .
                                   .
1239                               .          .<-------   D125S
1237                               .     RET125
                                   .          V
                                   .          V
1240                               .      RD125
                                   .          .
                                   .          .
1243                       CD133............
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          .         .         .
          .         .         .
1248      .         .         .-------> D133S
1246      .         .      D133
          .         .         V
          .         .         V
1251      .         .      R133
          .         .         .
          .         .         .
1254      .         .         .     SUB134
          .         .         .         .
          .         .         .         .
1261      .         .      CD134............
          .         .         .
          .         .         .
1266      .         .         .         .<-------   D127S
1264      .         .         .     RET127
          .         .         .         V
          .         .         .         V
1267      .         .         .      RD127
          .         .         .         .
          .         .         .         .
1270      .         .      CD135............
          .         .         .
          .         .         .
1275      .         .         .-------> D135S
1273      .         .      D135
          .         .         V
          .         .         V
1278      .         .      R135
          .         .         .
          .         .         .
1281      .         .         .     SUB136
          .         .         .         .
          .         .         .         .
1288      .         .      CD136............
          .         .         .
          .         .         .
1293      .         .         .         .<-------   D129S
1291      .         .         .     RET129
          .         .         .         V
          .         .         .         V
1294      .         .         .      RD129
          .         .         .         .
          .         .         .         .
1297      .         .      CD137............
          .         .         .
          .         .         .
1302      .         .         .-------> D137S
1300      .         .      D137
          .         .         .
          .         .         .
1305      .     CDE137............
          .         .
          .         .
1311      .         .-------> ELSBAS
1308      .     DIVELS
          .         V
          .         V
1314      .       R138
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            .          .
            .          .
1317        .          .     SUB140
            .          .          .
            .          .          .
1324        .      CD140............
            .          .
            .          .
1329        .          .          .<-------    D92S
1327        .          .     RET92S
            .          .          V
            .          .          V
1330        .          .       RD92
            .          .          .
            .          .          .
1333        .      CD141............
            .          V
            .          V
1336        .       R141
            .          .
            .          .
1339        .          .     SUB142
            .          .          .
            .          .          .
1346        .      CD142............
            .          .
            .          .
1351        .          .          .<-------    D94S
1349        .          .      RET94
            .          .          V
            .          .          V
1352        .          .       RD94
            .          .          .
            .          .          .
1355        .      CD143............
            .          V
            .          V
1358        .       R143
            .          .
            .          .
1361        .          .     SUB144
            .          .          .
            .          .          .
1368        .      CD144............
            .          .
            .          .
1374        .          .-------> ELLBAS
1371        .     DIVELL
            .          .
            .          .
1377      CD145............
            V
            V
1380       R145
            .
            .
1385        .          .<-------   D133S
1383        .     RET133
            .          V
            .          V
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1386          .      RD133
              .         .
              .         .
1391          .         .          .<-------   D1355
1389          .         .     RET135
              .         .          .
              .         .          .
1392          .      CD135............
              .         V
              .         V
1395          .      RD135
              .         .
              .         .
1400          .         .          .<-------   D1375
1398          .         .     RET137
              .         .          .
              .         .          .
1401          .     CDD137............
              .         .
              .         .
1407          .         .------->   GMBAS
1404          .      DIVGM
              .         V
              .         V
1410          .      RD137
              .         .
              .         .
1413          .         .     SUB147
              .         .          .
              .         .          .
1420          .      CD147............
              .         .
              .         .
1423          .         .     SUB148
              .         .          V
              .         .          V
1430          .         .       R148
              .         .          .
              .         .          .
1433          .      CD148............
              .         .
              .         .
1438          .         .------->   D1485
1436          .       D148
              .         V
              .         V
1441          .       R149
              .         .
              .         .
1444          .         .     SUB150
              .         .          .
              .         .          .
1451          .      CD150............
              .         .
              .         .
1456          .         .------->   D1505
1454          .       D150
              .         V
              .         V
1459          .       R150
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            .          .
            .          .
1462        .          .     SUB152
            .          .          .
            .          .          .
1469        .      CD152............
            .          .
            .          .
1475        .          .-------> WARBAS
1472        .     DIVWAR
            .          .
            .          .
1478     CD153............
            V
            V
1481      R153
            .
            .
1484        .     SUB154
            .          .
            .          .
1493        .          .          .<-------   D148S
1491        .          .     RET148
            .          .          V
            .          .          V
1494        .          .      RD148
            .          .          .
            .          .          .
1497        .      CD154............
            .          V
            .          V
1500        .       R154
            .          .
            .          .
1503        .          .     SUB156
            .          .          .
            .          .          .
1510        .      CD156............
            .          .
            .          .
1515        .          .          .<-------   D150S
1513        .          .     RET150
            .          .          V
            .          .          V
1516        .          .      RD150
            .          .          .
            .          .          .
1519        .      CD157............
            .          V
            .          V
1522        .       R157
            .          .
            .          .
1525        .          .     SUB158
            .          .          .
            .          .          .
1532        .      CD158............
            .          .
            .          .
1538        .          .-------> ARRBAS
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1535          .      DIVARR
              .          .
              .          .
1541      CO159............
              V
              V
1544       R159
              .
              .
1547          .      SUB160
              .          .
              .          .
1554      CO160............
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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                                    ****
                FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****



                        SUPERSTITION FREEWAY  -  MULTI- FRREQUENCY ANALYSIS    <EMF2>
                        EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
                        MARCH 1987   -  100-YEAR RAINFALL AND 2-YEAR PIPE SYSTEM

  5 ID        OUTPUT CONTROL VARIABLES
                   IPRNT          6  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT         HYDROGRAPH TIME DATA
                    NMIN         15  MINUTES IN COMPUTATION INTERVAL
                   IDATE     1    0  STARTING DATE
                   ITIME       0000  STARTING TIME
                      NQ        120  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE     2    0  ENDING DATE
                  NDTIME       0545  ENDING TIME

              COMPUTATION INTERVAL     .25 HOURS
                   TOTAL TIME BASE   29.75 HOURS

        ENGLISH UNITS

235 KO        OUTPUT CONTROL VARIABLES
                   IPRNT          3  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT         DIVERSION
                   ISTAD      RBAS1  DIVERSION HYDROGRAPH IDENTIFICATION

   DI            INFLOW        .00    150.00    300.00   3000.00

   DQ     DIVERTED FLOW        .00       .00    150.00   2850.00

                                                   ***

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

                    DIVERSION HYDROGRAPH    RBAS1

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
     0.        .25       (CFS)      0.         0.         0.          0.
                        (INCHES)   .000       .000       .000        .000
                         (AC-FT)     0.         0.         0.          0.

                    CUMULATIVE AREA =    2.01 SQ MI


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

                    HYDROGRAPH AT STATION     D22B
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
62.	12.00	(CFS)	62.	36.	29.	29.
		(INCHES)	.287	.665	.665	.665
		(AC-FT)	31.	71.	71.	71.

CUMULATIVE AREA = 2.01 SQ MI

281 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	D28B	DIVERSION HYDROGRAPH IDENTIFICATION

DI	INFLOW	.00	100.00	680.00	3000.00
DQ	DIVERTED FLOW	.00	.00	580.00	2900.00

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

DIVERSION HYDROGRAPH D28B

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
986.	12.75	(CFS)	306.	82.	66.	66.
		(INCHES)	.709	.757	.757	.757
		(AC-FT)	152.	162.	162.	162.

CUMULATIVE AREA = 4.01 SQ MI

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

HYDROGRAPH AT STATION D28

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
100.	12.00	(CFS)	100.	64.	51.	51.
		(INCHES)	.232	.590	.590	.590
		(AC-FT)	50.	126.	126.	126.

CUMULATIVE AREA = 4.01 SQ MI

449 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	DBA52	DIVERSION HYDROGRAPH IDENTIFICATION

DI	INFLOW	.00	110.00	250.00	3000.00

```
DQ      DIVERTED FLOW        .00       .00    140.00   2890.00

                                                          ***

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

                    DIVERSION HYDROGRAPH    DBAS2

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
 (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   25.      12.00        (CFS)     25.         8.         6.         6.
                       (INCHES)   .077       .098       .098       .098
                        (AC-FT)    12.        16.        16.        16.

                    CUMULATIVE AREA =    3.00 SQ MI


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

                    HYDROGRAPH AT STATION     D43B

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
 (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
  110.      12.00        (CFS)    110.        62.        50.        50.
                       (INCHES)   .341       .764       .764       .764
                        (AC-FT)    55.       122.       122.       122.

                    CUMULATIVE AREA =    3.00 SQ MI


477 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

DT              DIVERSION
                     ISTAQ       D45B  DIVERSION HYDROGRAPH IDENTIFICATION

DI                 INFLOW        .00      1.00   2120.00   3000.00

DQ      DIVERTED FLOW        .00       .00   2119.00   2999.00

                                                          ***

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

                    DIVERSION HYDROGRAPH     D45B

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
 (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
  710.      12.50        (CFS)    306.       120.        97.        97.
                       (INCHES)   .818      1.287      1.287      1.287
                        (AC-FT)   152.       239.       239.       239.

                    CUMULATIVE AREA =    3.48 SQ MI


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

                    HYDROGRAPH AT STATION      D45
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1.	10.00	(CFS)	1.	1.	1.	1.
		(INCHES)	.003	.009	.009	.009
		(AC-FT)	0.	2.	2.	2.

CUMULATIVE AREA = 3.48 SQ MI

658 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

		ISTAQ	SUPBAS	DIVERSION HYDROGRAPH IDENTIFICATION	
DT	DIVERSION				
DI		INFLOW	.00	1500.00	3000.00
DQ	DIVERTED FLOW		.00	.00	1500.00

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

DIVERSION HYDROGRAPH SUPBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1994.	12.75	(CFS)	254.	64.	51.	51.
		(INCHES)	1.577	1.577	1.577	1.577
		(AC-FT)	126.	126.	126.	126.

CUMULATIVE AREA = 1.50 SQ MI

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

HYDROGRAPH AT STATION DIVSUP

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1500.	12.25	(CFS)	703.	196.	158.	158.
		(INCHES)	4.356	4.850	4.850	4.850
		(AC-FT)	348.	388.	388.	388.

CUMULATIVE AREA = 1.50 SQ MI

902 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

		ISTAQ	GUABAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DT	DIVERSION					
DI		INFLOW	.00	835.00	2250.00	3000.00

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DQ      DIVERTED FLOW        .00       .00   1415.00   2165.00
                                                                  ***

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

                    DIVERSION HYDROGRAPH   GUABA5

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   695.     13.00        (CFS)     95.        24.        19.         19.
                       (INCHES)   .169       .169       .169        .169
                        (AC-FT)    47.        47.        47.         47.

                    CUMULATIVE AREA =    5.20 SQ MI

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

                    HYDROGRAPH AT STATION   DIVGUA

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   835.     12.50        (CFS)    503.       175.       141.        141.
                       (INCHES)   .900      1.253      1.253       1.253
                        (AC-FT)   249.       348.       348.        348.

                    CUMULATIVE AREA =    5.20 SQ MI

930 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

931 HC          HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

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

                    HYDROGRAPH AT STATION     C098

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
  4868.     13.50        (CFS)   2486.       899.       725.        725.
                       (INCHES)   .857      1.239      1.239       1.239
                        (AC-FT)  1233.      1783.      1783.       1783.

                    CUMULATIVE AREA =   26.99 SQ MI

934 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA
```

935 RK KINEMATIC WAVE STREAM ROUTING

L	5250.	CHANNEL LENGTH
S	.0003	SLOPE
N	.027	CHANNEL ROUGHNESS COEFFICIENT
CA	.00	CONTRIBUTING AREA
SHAPE	TRAP	CHANNEL SHAPE
WD	140.00	BOTTOM WIDTH OR DIAMETER
Z	3.00	SIDE SLOPE

***

KINEMATIC STREAM ROUTING USED FOR THIS REACH

COMPUTED KINEMATIC PARAMETERS

ALPHA	M	DT (MIN)	DX (FT)
.0433	1.616	7.50	2625.00

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

HYDROGRAPH AT STATION R98

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
4867.	13.75	(CFS)	2464.	889.	717.	717.
		(INCHES)	.849	1.226	1.226	1.226
		(AC-FT)	1222.	1764.	1764.	1764.

CUMULATIVE AREA = 26.99 SQ MI

1049 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

	ISTAQ	ELBBAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DI	INFLOW	.00	250.00	500.00	3000.00
DQ	DIVERTED FLOW	.00	.00	250.00	2750.00

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

DIVERSION HYDROGRAPH ELBBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
2237.	12.50	(CFS)	495.	124.	100.	100.
		(INCHES)	1.085	1.085	1.085	1.085
		(AC-FT)	245.	245.	245.	245.

CUMULATIVE AREA = 4.24 SQ MI

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

HYDROGRAPH AT STATION DIVELB

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
250.	12.00	(CFS)	246.	113.	91.	91.
		(INCHES)	.540	.993	.993	.993
		(AC-FT)	122.	225.	225.	225.

CUMULATIVE AREA = 4.24 SQ MI

1310 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

	DIVERSION ISTAD	ELSBAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DT					
DI	INFLOW	.00	42.00	84.00	3000.00
DQ	DIVERTED FLOW	.00	.00	42.00	2958.00

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

DIVERSION HYDROGRAPH ELSBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
415.	13.25	(CFS)	409.	220.	177.	177.
		(INCHES)	.239	.513	.513	.513
		(AC-FT)	203.	435.	435.	435.

CUMULATIVE AREA = 15.93 SQ MI

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

HYDROGRAPH AT STATION DIVELS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
42.	12.00	(CFS)	42.	32.	26.	26.
		(INCHES)	.025	.074	.074	.074
		(AC-FT)	21.	63.	63.	63.

CUMULATIVE AREA = 15.93 SQ MI

1373 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

	DIVERSION ISTAD	ELLBAS	DIVERSION HYDROGRAPH IDENTIFICATION
DT			

```
DI          INFLOW        .00    230.00    750.00   3050.00

DQ     DIVERTED FLOW      .00       .00    520.00   2820.00

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DIVERSION HYDROGRAPH ELLBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1040.	13.25	(CFS)	449.	114.	92.	92.
		(INCHES)	.223	.228	.228	.228
		(AC-FT)	223.	227.	227.	227.

CUMULATIVE AREA = 18.68 SQ MI

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HYDROGRAPH AT STATION DIVELL

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
230.	12.50	(CFS)	230.	130.	105.	105.
		(INCHES)	.114	.259	.259	.259
		(AC-FT)	114.	258.	258.	258.

CUMULATIVE AREA = 18.68 SQ MI

```
1406 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

DT             DIVERSION
                    ISTAD      GMBAS  DIVERSION HYDROGRAPH IDENTIFICATION

DI          INFLOW        .00    250.00    500.00   3500.00

DQ     DIVERTED FLOW      .00       .00    250.00   3250.00

                                                        ***

***         ***         ***         ***         ***
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DIVERSION HYDROGRAPH GMBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
3654.	13.00	(CFS)	1251.	318.	256.	256.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	620.	630.	630.	630.

CUMULATIVE AREA = .00 SQ MI

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HYDROGRAPH AT STATION DIVGM

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
250.	12.50	(CFS)	250.	116.	94.	94.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	124.	230.	230.	230.

CUMULATIVE AREA = .00 SQ MI

1474 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	WARBAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DI INFLOW	.00	450.00	1000.00	3000.00
DQ DIVERTED FLOW	.00	.00	550.00	2550.00

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

DIVERSION HYDROGRAPH WARBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
0.	.25	(CFS)	0.	0.	0.	0.
		(INCHES)	.000	.000	.000	.000
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 5.36 SQ MI

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

HYDROGRAPH AT STATION DIVWAR

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
427.	12.50	(CFS)	152.	75.	60.	60.
		(INCHES)	.264	.520	.520	.520
		(AC-FT)	76.	149.	149.	149.

CUMULATIVE AREA = 5.36 SQ MI

1537 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD ARRBAS DIVERSION HYDROGRAPH IDENTIFICATION

DI	INFLOW	.00	475.00	1200.00	3000.00
DQ	DIVERTED FLOW	.00	.00	725.00	2525.00

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DIVERSION HYDROGRAPH ARRBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1571.	13.25	(CFS)	614.	155.	125.	125.
		(INCHES)	2.974	3.004	3.004	3.004
		(AC-FT)	305.	308.	308.	308.

CUMULATIVE AREA = 1.92 SQ MI

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HYDROGRAPH AT STATION DIVARR

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
475.	12.50	(CFS)	475.	230.	186.	186.
		(INCHES)	2.300	4.455	4.455	4.455
		(AC-FT)	236.	456.	456.	456.

CUMULATIVE AREA = 1.92 SQ MI

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	SUB02	425.	12.50	84.	26.	21.	.50		
DIVERSION TO	D2S	407.	12.00	65.	16.	13.	.50		
HYDROGRAPH AT	D2	19.	12.00	19.	10.	8.	.50		
ROUTED TO	R2	19.	13.00	19.	10.	8.	.50		
ROUTED TO	R3	19.	19.75	18.	9.	7.	.50		
HYDROGRAPH AT	SUB04	551.	12.50	166.	53.	43.	1.02		
DIVERSION TO	D4S	525.	12.00	140.	37.	30.	1.02		
HYDROGRAPH AT	D4	26.	12.00	26.	16.	13.	1.02		
ROUTED TO	R4	26.	12.25	26.	16.	13.	1.02		
HYDROGRAPH AT	SUB06	427.	12.50	85.	26.	21.	.50		
2 COMBINED AT	C06	453.	12.50	111.	43.	34.	1.52		
DIVERSION TO	D6S	412.	12.00	70.	18.	14.	1.52		
HYDROGRAPH AT	D6	41.	12.00	41.	25.	20.	1.52		
HYDROGRAPH AT	RETD2	407.	12.50	65.	16.	13.	.00		
ROUTED TO	RD2	390.	12.50	66.	17.	14.	.00		
2 COMBINED AT	C07	431.	12.50	107.	42.	33.	1.52		
ROUTED TO	R7	404.	12.50	107.	42.	34.	1.52		
HYDROGRAPH AT	SUB08	817.	12.50	156.	49.	39.	.95		
ROUTED TO	BAS08	345.	13.00	108.	36.	29.	.95	2.69	13.00
2 COMBINED AT	C08	711.	12.75	212.	77.	62.	2.47		
DIVERSION TO	D8S	669.	12.25	170.	50.	40.	2.47		
HYDROGRAPH AT	D8	42.	12.25	42.	28.	22.	2.47		
ROUTED TO	R8	42.	12.50	42.	27.	22.	2.47		
HYDROGRAPH AT	SUB10	316.	12.25	72.	23.	18.	.44		
2 COMBINED AT	C010	356.	12.25	112.	50.	40.	2.91		
2 COMBINED AT	C011	356.	12.25	118.	59.	47.	3.41		

ROUTED TO	R11	225.	13.25	108.	56.	45.	3.41		
HYDROGRAPH AT	SUB12	204.	13.00	87.	29.	24.	.61		
2 COMBINED AT	CO12	424.	13.00	189.	85.	69.	4.02		
HYDROGRAPH AT	SUB14	163.	12.50	42.	13.	11.	.25		
HYDROGRAPH AT	RETD6S	412.	12.50	70.	18.	14.	.00		
ROUTED TO	RD6	399.	12.50	70.	18.	15.	.00		
2 COMBINED AT	CO14	562.	12.50	113.	31.	25.	.25		
DIVERSION TO	D14S	264.	12.50	53.	15.	12.	.25		
HYDROGRAPH AT	D14	298.	12.50	60.	17.	13.	.25		
ROUTED TO	R14	257.	12.75	61.	17.	14.	.25		
HYDROGRAPH AT	SUB16	564.	12.25	95.	30.	24.	.50		
ROUTED TO	BAS16	3.	25.75	3.	2.	1.	.50	88.65	26.50
2 COMBINED AT	CO16	258.	12.75	63.	19.	15.	.75		
HYDROGRAPH AT	RETD8S	669.	12.75	170.	50.	40.	.00		
ROUTED TO	RD8	600.	12.75	171.	50.	41.	.00		
2 COMBINED AT	CO17	858.	12.75	234.	69.	56.	.75		
ROUTED TO	R17	809.	12.75	233.	69.	56.	.75		
HYDROGRAPH AT	SUB18	188.	12.50	45.	14.	12.	.28		
DIVERSION TO	D18S	180.	12.00	38.	10.	8.	.28		
HYDROGRAPH AT	D18	8.	12.00	8.	5.	4.	.28		
ROUTED TO	R18	8.	12.75	8.	5.	4.	.28		
HYDROGRAPH AT	SUB20	644.	12.50	153.	49.	39.	.98		
2 COMBINED AT	CO20	652.	12.50	160.	53.	43.	1.26		
DIVERSION TO	D20S	612.	12.00	121.	31.	25.	1.26		
HYDROGRAPH AT	D20	40.	12.00	40.	23.	18.	1.26		
ROUTED TO	R20	40.	12.25	40.	23.	18.	1.26		
HYDROGRAPH AT	SUB22	434.	12.50	116.	37.	30.	.75		
2 COMBINED AT	CO22	474.	12.50	156.	60.	48.	2.01		
DIVERSION TO	D22S	412.	12.00	94.	24.	19.	2.01		
HYDROGRAPH AT	D22	62.	12.00	62.	36.	29.	2.01		

DIVERSION TO	RBAS1	0.	12.00	0.	0.	0.	2.01
HYDROGRAPH AT	D22B	62.	12.00	62.	36.	29.	2.01
ROUTED TO	R22	62.	12.25	62.	36.	29.	2.01
HYDROGRAPH AT	SUB24	269.	13.00	123.	41.	33.	.81
2 COMBINED AT	CO24	331.	13.00	185.	77.	62.	2.82
DIVERSION TO	D24S	261.	12.00	115.	33.	27.	2.82
HYDROGRAPH AT	D24	70.	12.00	70.	44.	36.	2.82
ROUTED TO	R24	70.	12.25	70.	44.	36.	2.82
HYDROGRAPH AT	SUB26	492.	12.75	193.	63.	51.	1.19
HYDROGRAPH AT	RETD4S	525.	12.50	140.	37.	30.	.00
ROUTED TO	RD4	524.	12.75	143.	38.	31.	.00
2 COMBINED AT	CO26	1016.	12.75	336.	101.	82.	1.19
2 COMBINED AT	CO27	1086.	12.75	406.	145.	117.	4.01
DIVERSION TO	D28B	986.	12.00	306.	82.	66.	4.01
HYDROGRAPH AT	D28	100.	12.00	100.	64.	51.	4.01
HYDROGRAPH AT	RED14S	264.	12.50	53.	15.	12.	.00
ROUTED TO	RD14	243.	12.50	53.	15.	12.	.00
2 COMBINED AT	CO28	343.	12.50	153.	78.	63.	4.01
ROUTED TO	R28	330.	12.50	153.	78.	63.	4.01
HYDROGRAPH AT	SUB30	64.	12.25	10.	3.	3.	.05
2 COMBINED AT	CO30	373.	12.50	163.	82.	66.	4.07
DIVERSION TO	D30S	267.	12.00	57.	14.	12.	4.07
HYDROGRAPH AT	D30	106.	12.00	106.	67.	54.	4.07
ROUTED TO	RD30	106.	12.25	106.	67.	54.	4.07
HYDROGRAPH AT	SUB32	468.	12.25	85.	26.	21.	.45
2 COMBINED AT	CO32	574.	12.25	189.	93.	75.	4.51
2 COMBINED AT	CO33	1131.	12.75	421.	163.	131.	5.26
DIVERSION TO	D33S	1006.	12.00	296.	82.	66.	5.26
HYDROGRAPH AT	D33	125.	12.00	125.	80.	65.	5.26
ROUTED TO	R33	125.	12.25	125.	80.	65.	5.26

2 COMBINED AT	CO34	549.	13.00	314.	166.	134.	9.28
ROUTED TO	R34	557.	13.25	319.	164.	132.	9.28
HYDROGRAPH AT	RED33S	1006.	12.75	296.	82.	66.	.00
ROUTED TO	RD33S	996.	12.75	297.	82.	67.	.00
2 COMBINED AT	CO35	1234.	13.00	595.	247.	199.	9.28
ROUTED TO	R35	1232.	13.25	597.	246.	199.	9.28
HYDROGRAPH AT	SUB36	774.	12.50	166.	52.	42.	.94
HYDROGRAPH AT	RED18S	180.	12.50	38.	10.	8.	.00
ROUTED TO	RD18	167.	12.50	38.	10.	8.	.00
2 COMBINED AT	CO36	940.	12.50	204.	62.	50.	.94
DIVERSION TO	D36S	901.	12.00	166.	42.	34.	.94
HYDROGRAPH AT	D36	39.	12.00	39.	21.	17.	.94
ROUTED TO	R36	39.	12.25	39.	21.	17.	.94
HYDROGRAPH AT	SUB38	866.	12.25	163.	51.	41.	.84
2 COMBINED AT	CO38	905.	12.25	201.	71.	57.	1.78
DIVERSION TO	D38S	821.	12.00	119.	30.	24.	1.78
HYDROGRAPH AT	D38	84.	12.00	83.	41.	33.	1.78
ROUTED TO	R38	84.	12.25	83.	41.	33.	1.78
HYDROGRAPH AT	RED20S	612.	12.50	121.	31.	25.	.00
ROUTED TO	RD20	533.	12.75	121.	31.	25.	.00
HYDROGRAPH AT	SUB40	720.	12.50	136.	43.	35.	.77
2 COMBINED AT	CO40	1213.	12.50	256.	74.	60.	.77
2 COMBINED AT	CO41	1297.	12.50	339.	115.	93.	2.55
DIVERSION TO	D41S	1181.	12.00	223.	56.	45.	2.55
HYDROGRAPH AT	D41	116.	12.00	116.	59.	48.	2.55
ROUTED TO	R41	116.	12.25	116.	59.	48.	2.55
HYDROGRAPH AT	SUB42	370.	12.50	76.	24.	19.	.45
HYDROGRAPH AT	RED22S	412.	12.50	94.	24.	19.	.00
ROUTED TO	DR22	383.	12.75	93.	24.	20.	.00
2 COMBINED AT	CO42	731.	12.50	169.	48.	39.	.45

2 COMBINED AT	CO43	847.	12.50	285.	108.	87.	3.00		
DIVERSION TO	D43S	712.	12.00	150.	38.	31.	3.00		
HYDROGRAPH AT	DIV43S	135.	12.00	135.	70.	56.	3.00		
DIVERSION TO	DBAS2	25.	12.00	25.	8.	6.	3.00		
HYDROGRAPH AT	D43B	110.	12.00	110.	62.	50.	3.00		
ROUTED TO	R43	110.	12.25	110.	62.	50.	3.00		
HYDROGRAPH AT	SUB44	433.	12.50	86.	27.	22.	.48		
HYDROGRAPH AT	RED24S	261.	13.00	115.	33.	27.	.00		
ROUTED TO	RD24	258.	13.00	114.	33.	27.	.00		
2 COMBINED AT	CO44	601.	12.50	198.	60.	48.	.48		
2 COMBINED AT	CO45	711.	12.50	307.	121.	98.	3.48		
DIVERSION TO	D45B	710.	10.00	306.	120.	97.	3.48		
HYDROGRAPH AT	D45	1.	10.00	1.	1.	1.	3.48		
ROUTED TO	R45	1.	11.25	1.	1.	1.	3.48		
HYDROGRAPH AT	SUB48	551.	12.25	99.	30.	25.	.52		
2 COMBINED AT	CO49	552.	12.25	100.	31.	25.	4.00		
ROUTED TO	R49	475.	12.25	101.	31.	25.	4.00		
HYDROGRAPH AT	SUB50	1110.	12.25	187.	58.	47.	1.00		
HYDROGRAPH AT	RED30S	267.	12.50	57.	14.	12.	.00		
ROUTED TO	RD30	250.	12.75	56.	14.	12.	.00		
2 COMBINED AT	CO50	1161.	12.25	242.	72.	58.	1.00		
2 COMBINED AT	CO51	1636.	12.25	343.	103.	83.	5.00		
2 COMBINED AT	CO52	2295.	12.50	917.	350.	282.	14.28		
ROUTED TO	R52	1994.	12.75	896.	345.	278.	14.28		
HYDROGRAPH AT	SUB54	566.	13.00	237.	80.	65.	1.56		
ROUTED TO	RET30	258.	14.50	133.	49.	40.	1.56	3.07	14.50
2 COMBINED AT	CO62	1994.	12.75	1012.	394.	318.	15.84		
HYDROGRAPH AT	SUB56	1035.	12.50	216.	68.	55.	1.19		
HYDROGRAPH AT	RET38S	821.	12.25	119.	30.	24.	.00		
ROUTED TO	RO38	640.	12.75	117.	30.	24.	.00		

2 COMBINED AT	C056	1644.	12.50	333.	98.	79.	1.19
DIVERSION TO	D56S	1587.	12.00	277.	69.	56.	1.19
HYDROGRAPH AT	D56	57.	12.00	57.	29.	23.	1.19
HYDROGRAPH AT	RET41S	1181.	12.50	223.	56.	45.	.00
ROUTED TO	RD41	1055.	12.75	220.	55.	45.	.00
2 COMBINED AT	C057	1112.	12.75	277.	84.	68.	1.19
DIVERSION TO	D57S	1055.	12.00	220.	55.	45.	1.19
HYDROGRAPH AT	D57	57.	12.00	57.	29.	23.	1.19
ROUTED TO	R57	57.	12.25	57.	29.	23.	1.19
HYDROGRAPH AT	RET43S	712.	12.50	150.	38.	31.	.00
ROUTED TO	RD43	592.	13.00	145.	38.	31.	.00
HYDROGRAPH AT	SUB58	155.	13.00	62.	21.	17.	.38
2 COMBINED AT	C058	747.	13.00	206.	59.	47.	.38
2 COMBINED AT	C059	804.	13.00	263.	88.	71.	1.57
DIVERSION TO	D59S	742.	12.00	201.	52.	42.	1.57
HYDROGRAPH AT	D59	62.	12.00	62.	35.	28.	1.57
ROUTED TO	R59	62.	12.25	62.	35.	28.	1.57
2 COMBINED AT	C064	2056.	12.75	1074.	430.	347.	17.41
ROUTED TO	R64	2040.	13.00	1087.	432.	348.	17.41
HYDROGRAPH AT	SUB66	204.	12.50	52.	16.	13.	.31
HYDROGRAPH AT	RET56S	1587.	12.50	277.	69.	56.	.00
ROUTED TO	RD56	1465.	12.50	278.	70.	56.	.00
2 COMBINED AT	C066	1669.	12.50	330.	86.	69.	.31
HYDROGRAPH AT	RET57S	1055.	12.75	220.	55.	45.	.00
ROUTED TO	RD57	1039.	12.75	221.	56.	45.	.00
2 COMBINED AT	C067	2512.	12.50	550.	141.	114.	.31
ROUTED TO	R67	2441.	12.75	552.	142.	115.	.31
HYDROGRAPH AT	SUB68	934.	12.50	206.	65.	52.	1.19
HYDROGRAPH AT	RET59S	742.	13.00	201.	52.	42.	.00
ROUTED TO	RD59	721.	13.00	201.	52.	42.	.00

2 COMBINED AT	CO68	1078.	12.50	405.	117.	95.	1.19
2 COMBINED AT	CO69	3494.	12.75	957.	259.	209.	1.50
DIVERSION TO	SUPBAS	1994.	12.25	254.	64.	51.	1.50
HYDROGRAPH AT	DIVSUP	1500.	12.25	703.	196.	158.	1.50
ROUTED TO	R69	1500.	12.50	707.	197.	159.	1.50
HYDROGRAPH AT	SUB70	120.	12.75	48.	16.	13.	.42
2 COMBINED AT	CO70	1620.	12.75	755.	213.	172.	1.92
2 COMBINED AT	CO71	3658.	13.00	1800.	645.	520.	19.33
ROUTED TO	R71	3625.	13.25	1800.	643.	519.	19.33
HYDROGRAPH AT	SUB72	188.	13.00	81.	27.	22.	.61
DIVERSION TO	D72S	181.	12.00	74.	22.	18.	.61
HYDROGRAPH AT	D72	7.	12.00	7.	5.	4.	.61
ROUTED TO	R72	7.	12.25	7.	5.	4.	.61
HYDROGRAPH AT	SUB74	101.	13.25	51.	18.	14.	.51
2 COMBINED AT	CO74	108.	13.25	58.	23.	18.	1.12
2 COMBINED AT	CO75	3733.	13.25	1858.	666.	538.	20.45
ROUTED TO	R75	3700.	13.50	1818.	656.	529.	20.45
HYDROGRAPH AT	SUB76	62.	13.25	31.	11.	9.	.29
2 COMBINED AT	CO76	3757.	13.50	1845.	667.	538.	20.75
HYDROGRAPH AT	SUB78	71.	12.50	22.	7.	6.	.14
DIVERSION TO	D78S	68.	12.00	19.	5.	4.	.14
HYDROGRAPH AT	D78	3.	12.00	3.	2.	2.	.14
ROUTED TO	R78	3.	12.25	3.	2.	2.	.14
HYDROGRAPH AT	SUB80	195.	14.00	117.	43.	35.	.86
HYDROGRAPH AT	RET36S	901.	12.50	166.	42.	34.	.00
ROUTED TO	RD36	820.	12.50	164.	41.	33.	.00
2 COMBINED AT	CO80	848.	12.50	277.	84.	68.	.86
2 COMBINED AT	CO81	851.	12.50	280.	86.	70.	1.00
DIVERSION TO	D81S	838.	12.00	267.	77.	62.	1.00
HYDROGRAPH AT	D81	13.	12.00	13.	10.	8.	1.00

ROUTED TO	R81	13.	12.25	13.	10.	8.	1.00		
HYDROGRAPH AT	SUB82	472.	12.25	79.	24.	20.	.43		
2 COMBINED AT	CO82	485.	12.25	91.	34.	27.	1.43		
ROUTED TO	R82	399.	12.25	93.	34.	28.	1.43		
HYDROGRAPH AT	SUB84	250.	12.50	64.	20.	16.	.35		
HYDROGRAPH AT	RET78S	68.	12.50	19.	5.	4.	.00		
ROUTED TO	DR78	67.	12.75	19.	5.	4.	.00		
2 COMBINED AT	CO84	310.	12.50	83.	26.	21.	.35		
HYDROGRAPH AT	RET81S	838.	12.50	267.	77.	62.	.00		
ROUTED TO	RD81	783.	12.75	266.	77.	62.	.00		
2 COMBINED AT	CO83	1063.	12.50	349.	102.	83.	.35		
ROUTED TO	R85	1052.	12.75	346.	102.	82.	.35		
HYDROGRAPH AT	SUB86	465.	12.25	88.	27.	22.	.46		
ROUTED TO	RET86	139.	13.00	54.	18.	15.	.46	3.37	13.00
2 COMBINED AT	CO86	1163.	12.75	399.	121.	97.	.81		
2 COMBINED AT	CO87	1408.	12.75	490.	155.	125.	2.24		
ROUTED TO	R87	1332.	12.75	493.	156.	126.	2.24		
HYDROGRAPH AT	SUB88	105.	13.25	55.	19.	15.	.53		
DIVERSION TO	D88S	103.	12.00	53.	18.	14.	.53		
HYDROGRAPH AT	D88	2.	12.00	2.	1.	1.	.53		
ROUTED TO	R88	2.	12.75	2.	1.	1.	.53		
HYDROGRAPH AT	SUB90	215.	12.75	84.	27.	22.	.47		
2 COMBINED AT	CO90	217.	12.75	86.	29.	23.	1.00		
2 COMBINED AT	CO91	1548.	12.75	579.	185.	149.	3.24		
ROUTED TO	R91	1511.	13.00	579.	185.	149.	3.24		
HYDROGRAPH AT	SUB92	193.	14.00	124.	45.	37.	1.00		
HYDROGRAPH AT	RET88S	103.	13.25	53.	18.	14.	.00		
ROUTED TO	RD88	101.	13.50	52.	18.	14.	.00		
2 COMBINED AT	CO92	287.	13.75	176.	63.	51.	1.00		
DIVERSION TO	D92S	278.	12.25	167.	56.	45.	1.00		

HYDROGRAPH AT	D92	9.	12.25	9.	7.	5.	1.00
ROUTED TO	R92	9.	12.75	9.	7.	5.	1.00
HYDROGRAPH AT	SUB94	255.	13.25	123.	42.	34.	.96
2 COMBINED AT	CO94	264.	13.25	131.	49.	39.	1.96
DIVERSION TO	D94S	245.	12.25	112.	35.	28.	1.96
HYDROGRAPH AT	D94	19.	12.25	19.	14.	11.	1.96
2 COMBINED AT	CO95	1530.	13.00	598.	199.	160.	5.20
DIVERSION TO	GUABAS	695.	12.50	95.	24.	19.	5.20
HYDROGRAPH AT	DIVGUA	835.	12.50	503.	175.	141.	5.20
ROUTED TO	R95	835.	12.75	501.	175.	141.	5.20
HYDROGRAPH AT	SUB96	128.	14.50	91.	35.	28.	1.04
2 COMBINED AT	CO96	951.	13.75	589.	210.	170.	6.24
HYDROGRAPH AT	RET72	181.	13.00	74.	22.	18.	.00
ROUTED TO	DR72	174.	13.25	73.	22.	18.	.00
2 COMBINED AT	CO97	1111.	13.50	662.	233.	188.	6.24
2 COMBINED AT	CO98	4868.	13.50	2486.	899.	725.	26.99
ROUTED TO	R98	4867.	13.75	2464.	889.	717.	26.99
HYDROGRAPH AT	SUB100	896.	12.25	160.	49.	40.	.82
HYDROGRAPH AT	SUB102	215.	12.25	36.	11.	9.	.18
2 COMBINED AT	CO102	1111.	12.25	196.	61.	49.	1.00
ROUTED TO	R102	987.	12.50	198.	61.	49.	1.00
HYDROGRAPH AT	SUB104	551.	12.25	106.	33.	26.	.55
2 COMBINED AT	CO104	1495.	12.50	304.	94.	76.	1.55
HYDROGRAPH AT	SUB106	394.	12.75	155.	51.	41.	1.00
DIVERSION TO	D106S	375.	12.00	136.	38.	31.	1.00
HYDROGRAPH AT	D106	19.	12.00	19.	13.	10.	1.00
ROUTED TO	R106	19.	12.25	19.	13.	10.	1.00
HYDROGRAPH AT	SUB108	476.	12.25	84.	26.	21.	.45
2 COMBINED AT	CO108	495.	12.25	102.	39.	31.	1.45
DIVERSION TO	D108S	457.	12.00	65.	16.	13.	1.45

HYDROGRAPH AT	D108	38.	12.00	38.	22.	18.	1.45
2 COMBINED AT	CD109	1533.	12.50	342.	116.	94.	3.00
ROUTED TO	R109	1507.	12.50	343.	116.	94.	3.00
HYDROGRAPH AT	SUB110	308.	13.00	129.	42.	34.	.77
HYDROGRAPH AT	RET106	375.	12.75	136.	38.	31.	.00
ROUTED TO	RD106	369.	12.75	136.	38.	31.	.00
2 COMBINED AT	CD110	663.	12.75	265.	80.	65.	.77
ROUTED TO	R110	660.	13.00	263.	80.	65.	.77
HYDROGRAPH AT	RET108	457.	12.25	65.	16.	13.	.00
ROUTED TO	RD106	404.	12.50	66.	16.	13.	.00
2 COMBINED AT	CD111	851.	12.50	327.	97.	78.	.77
HYDROGRAPH AT	SUB112	164.	13.00	72.	24.	19.	.47
2 COMBINED AT	CD112	996.	12.75	399.	120.	97.	1.24
2 COMBINED AT	CD113	2487.	12.50	740.	237.	191.	4.24
DIVERSION TO	ELBBAS	2237.	12.00	495.	124.	100.	4.24
HYDROGRAPH AT	DIVELB	250.	12.00	246.	113.	91.	4.24
ROUTED TO	R113	250.	12.25	246.	113.	91.	4.24
HYDROGRAPH AT	SUB114	266.	13.00	109.	36.	29.	.70
DIVERSION TO	D114S	254.	12.00	97.	28.	22.	.70
HYDROGRAPH AT	D114	12.	12.00	12.	8.	7.	.70
ROUTED TO	R114	12.	12.50	12.	8.	7.	.70
HYDROGRAPH AT	SUB116	318.	12.50	92.	30.	24.	.58
2 COMBINED AT	CD116	330.	12.50	104.	38.	30.	1.28
DIVERSION TO	D116S	304.	12.00	78.	21.	17.	1.28
HYDROGRAPH AT	D116	26.	12.00	26.	17.	14.	1.28
ROUTED TO	R116	26.	14.75	26.	16.	13.	1.28
HYDROGRAPH AT	SUB118	342.	12.50	95.	30.	25.	.62
2 COMBINED AT	CD118	356.	12.50	119.	47.	38.	1.90
DIVERSION TO	D118S	319.	12.00	82.	23.	18.	1.90
HYDROGRAPH AT	D118	37.	12.00	37.	24.	20.	1.90

2 COMBINED AT	CO119	287.	12.25	283.	137.	111.	6.14
ROUTED TO	R119	287.	13.00	282.	137.	110.	6.14
HYDROGRAPH AT	SUB120	646.	12.50	142.	45.	36.	.88
ROUTED TO	R120	594.	12.75	143.	45.	36.	.88
HYDROGRAPH AT	SUB122	316.	12.75	112.	36.	29.	.71
2 COMBINED AT	CO122	910.	12.75	255.	81.	65.	1.59
ROUTED TO	R122	896.	12.75	255.	81.	66.	1.59
HYDROGRAPH AT	SUB124	449.	12.75	157.	51.	41.	1.00
2 COMBINED AT	CO124	1345.	12.75	412.	132.	107.	2.59
HYDROGRAPH AT	RET114	254.	13.00	97.	28.	22.	.00
ROUTED TO	RD114	251.	13.00	96.	28.	22.	.00
2 COMBINED AT	CO125	1572.	12.75	507.	160.	129.	2.59
DIVERSION TO	D125S	1510.	12.00	445.	120.	97.	2.59
HYDROGRAPH AT	D125	62.	12.00	62.	39.	32.	2.59
ROUTED TO	R125	62.	12.25	62.	39.	32.	2.59
HYDROGRAPH AT	SUB126	336.	13.00	152.	51.	41.	1.00
2 COMBINED AT	CO126	398.	13.00	214.	90.	73.	3.59
HYDROGRAPH AT	RET116	304.	12.50	78.	21.	17.	.00
ROUTED TO	RD116	279.	12.75	78.	21.	17.	.00
2 COMBINED AT	CO127	658.	12.75	292.	111.	89.	3.59
DIVERSION TO	D127S	582.	12.00	216.	61.	49.	3.59
HYDROGRAPH AT	D127	76.	12.00	76.	50.	40.	3.59
ROUTED TO	R127	76.	12.25	76.	49.	40.	3.59
HYDROGRAPH AT	SUB128	131.	14.25	91.	33.	28.	1.00
2 COMBINED AT	CO128	207.	14.25	167.	84.	68.	4.59
HYDROGRAPH AT	RET118	319.	12.50	82.	23.	18.	.00
ROUTED TO	RD118	288.	12.75	81.	23.	18.	.00
2 COMBINED AT	CO129	452.	12.75	247.	107.	86.	4.59
DIVERSION TO	D129S	375.	12.25	170.	54.	44.	4.59
HYDROGRAPH AT	D129	77.	12.25	77.	52.	42.	4.59

2 COMBINED AT	COE129	364.	13.00	359.	189.	152.	10.73
ROUTED TO	RE129	364.	13.25	358.	188.	151.	10.73
HYDROGRAPH AT	SUB130	599.	13.25	295.	100.	80.	2.00
ROUTED TO	R130	592.	13.25	295.	100.	80.	2.00
HYDROGRAPH AT	SUB132	538.	12.75	187.	61.	49.	1.20
2 COMBINED AT	CD132	1034.	13.00	480.	160.	129.	3.20
HYDROGRAPH AT	RET125	1510.	12.75	445.	120.	97.	.00
ROUTED TO	RD125	1408.	12.75	440.	120.	97.	.00
2 COMBINED AT	CD133	2415.	12.75	918.	280.	226.	3.20
DIVERSION TO	D133S	2364.	12.00	867.	245.	198.	3.20
HYDROGRAPH AT	D133	51.	12.00	51.	36.	29.	3.20
ROUTED TO	R133	51.	12.25	51.	36.	29.	3.20
HYDROGRAPH AT	SUB134	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CD134	499.	12.75	206.	86.	69.	4.20
HYDROGRAPH AT	RET127	562.	12.75	216.	61.	49.	.00
ROUTED TO	RD127	562.	13.00	213.	61.	49.	.00
2 COMBINED AT	CD135	1049.	12.75	418.	147.	119.	4.20
DIVERSION TO	D135S	976.	12.00	345.	97.	78.	4.20
HYDROGRAPH AT	D135	73.	12.00	73.	50.	40.	4.20
ROUTED TO	R135	73.	12.25	73.	50.	40.	4.20
HYDROGRAPH AT	SUB136	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CD136	521.	12.75	228.	100.	81.	5.20
HYDROGRAPH AT	RET129	375.	12.75	170.	54.	44.	.00
ROUTED TO	RD129	353.	13.00	167.	54.	44.	.00
2 COMBINED AT	CD137	853.	12.75	393.	155.	125.	5.20
DIVERSION TO	D137S	760.	12.00	300.	91.	73.	5.20
HYDROGRAPH AT	D137	93.	12.00	93.	64.	51.	5.20
2 COMBINED AT	COE137	457.	13.25	451.	251.	203.	15.93
DIVERSION TO	ELSBAS	415.	12.00	409.	220.	177.	15.93
HYDROGRAPH AT	DIVELS	42.	12.00	42.	32.	26.	15.93

ROUTED TO	R138	42.	13.25	42.	31.	25.	15.93
HYDROGRAPH AT	SUB140	445.	12.75	155.	50.	41.	1.00
2 COMBINED AT	CO140	487.	12.75	197.	82.	66.	16.93
HYDROGRAPH AT	RET92S	278.	13.75	167.	56.	45.	.00
ROUTED TO	RD92	276.	14.00	166.	56.	45.	.00
2 COMBINED AT	CO141	620.	13.00	357.	138.	111.	16.93
ROUTED TO	R141	607.	13.00	355.	137.	110.	16.93
HYDROGRAPH AT	SUB142	390.	13.00	144.	48.	38.	1.00
2 COMBINED AT	CO142	996.	13.00	499.	184.	149.	17.93
HYDROGRAPH AT	RET94	245.	13.25	112.	35.	28.	.00
ROUTED TO	RD94	243.	13.25	111.	35.	28.	.00
2 COMBINED AT	CO143	1211.	13.00	609.	219.	177.	17.93
ROUTED TO	R143	1181.	13.25	608.	219.	177.	17.93
HYDROGRAPH AT	SUB144	113.	14.00	69.	26.	21.	.75
2 COMBINED AT	CO144	1270.	13.25	676.	244.	197.	18.68
DIVERSION TO	ELLBAS	1040.	12.50	449.	114.	92.	18.68
HYDROGRAPH AT	DIVELL	230.	12.50	230.	130.	105.	18.68
2 COMBINED AT	CO145	5097.	13.75	2694.	1019.	822.	45.67
ROUTED TO	R145	5043.	14.00	2651.	1003.	809.	45.67
HYDROGRAPH AT	RET133	2364.	12.75	867.	245.	198.	.00
ROUTED TO	RD133	2361.	13.00	862.	245.	197.	.00
HYDROGRAPH AT	RET135	976.	12.75	345.	97.	78.	.00
2 COMBINED AT	CO135	3302.	13.00	1206.	342.	276.	.00
ROUTED TO	RD135	3170.	13.00	1201.	342.	276.	.00
HYDROGRAPH AT	RET137	760.	12.75	300.	91.	73.	.00
2 COMBINED AT	COD137	3904.	13.00	1500.	434.	350.	.00
DIVERSION TO	GMBAS	3654.	12.50	1251.	318.	256.	.00
HYDROGRAPH AT	DIVGM	250.	12.50	250.	116.	94.	.00
ROUTED TO	RD137	250.	14.25	250.	116.	93.	.00
HYDROGRAPH AT	SUB147	416.	12.75	149.	48.	39.	1.00

2 COMBINED AT	CO147	635.	12.75	384.	164.	133.	1.00
HYDROGRAPH AT	SUB148	716.	13.25	389.	133.	108.	2.66
ROUTED TO	R148	715.	13.50	389.	133.	108.	2.66
2 COMBINED AT	CO148	1286.	13.00	773.	298.	240.	3.66
DIVERSION TO	D148S	1233.	12.00	720.	259.	209.	3.66
HYDROGRAPH AT	D148	53.	12.00	53.	38.	31.	3.66
ROUTED TO	R149	53.	13.00	53.	38.	31.	3.66
HYDROGRAPH AT	SUB150	351.	12.75	134.	44.	36.	1.00
2 COMBINED AT	CO150	404.	12.75	186.	82.	66.	4.66
DIVERSION TO	D150S	339.	12.25	121.	36.	29.	4.66
HYDROGRAPH AT	D150	65.	12.25	65.	46.	37.	4.66
ROUTED TO	R150	65.	12.50	65.	46.	37.	4.66
HYDROGRAPH AT	SUB152	362.	12.50	89.	29.	23.	.70
2 COMBINED AT	CO152	427.	12.50	152.	75.	60.	5.36
DIVERSION TO	WARBAS	0.	12.50	0.	0.	0.	5.36
HYDROGRAPH AT	DIVWAR	427.	12.50	152.	75.	60.	5.36
2 COMBINED AT	CO153	5189.	14.00	2764.	1078.	870.	51.03
ROUTED TO	R153	5189.	14.00	2766.	1074.	866.	51.03
HYDROGRAPH AT	SUB154	152.	13.00	73.	25.	20.	.49
HYDROGRAPH AT	RET148	1233.	13.00	720.	259.	209.	.00
ROUTED TO	RD148	1219.	13.25	718.	260.	210.	.00
2 COMBINED AT	CO154	1371.	13.25	791.	284.	229.	.49
ROUTED TO	R154	1368.	13.25	786.	284.	229.	.49
HYDROGRAPH AT	SUB156	226.	13.25	109.	36.	29.	.73
2 COMBINED AT	CO156	1594.	13.25	892.	320.	258.	1.22
HYDROGRAPH AT	RET150	339.	12.75	121.	36.	29.	.00
ROUTED TO	RD150	334.	13.00	122.	36.	29.	.00
2 COMBINED AT	CO157	1900.	13.25	1010.	357.	288.	1.22
ROUTED TO	R157	1891.	13.25	1009.	356.	288.	1.22
HYDROGRAPH AT	SUB158	155.	13.25	83.	29.	23.	.70

2 COMBINED AT	CO158	2046.	13.25	1089.	385.	311.	1.92
DIVERSION TO	ARRBAS	1571.	12.50	614.	155.	125.	1.92
HYDROGRAPH AT	DIVARR	475.	12.50	475.	230.	186.	1.92
2 COMBINED AT	CO159	5664.	14.00	3241.	1304.	1052.	52.94
ROUTED TO	R159	5594.	14.25	3224.	1293.	1043.	52.94
HYDROGRAPH AT	SUB160	599.	13.00	225.	75.	61.	1.55
2 COMBINED AT	CO160	5871.	14.25	3393.	1368.	1103.	54.49

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

Appendix K

HEC-1 Input and Output - 5 year

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

  1           ID       SUPERSTITION FREEWAY  -  MULTI- FRREQUENCY ANALYSIS    (EMF5)
  2           ID       EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
  3           ID       MARCH 1987   -  100-YEAR RAINFALL AND 5-YEAR PIPE SYSTEM
  4           IT      15                   120
  5           ID       6
  6           PB       1    3.65
  7           PB      10
  8           IN      30                    48
  9           PI   0.019   0.020   0.020   0.022   0.022   0.023   0.025   0.025   0.026   0.028
 10           PI   0.029   0.031   0.033   0.035   0.038   0.042   0.046   0.051   0.057   0.067
 11           PI   0.085   0.113   0.176   1.387   0.262   0.136   0.097   0.076   0.067   0.058
 12           PI   0.050   0.046   0.041   0.038   0.035   0.033   0.031   0.029   0.027   0.027
 13           PI   0.025   0.024   0.023   0.022   0.022   0.020   0.020   0.019

 14           KK   SUB02
 15           KM       LOCAL RUNOFF AT MC KELLIPS AND RECKER ROADS
 16           PR      10
 17           PW       1
 18           PT       1
 19           PW       1
 20           BA    0.50
 21           LS           83.5
 22           UK     110  0.0050    0.20     100
 23           RK    6000   0.015   0.035   0.084    TRAP    40.0    0.01
 24           RK    7700  0.0085   0.012           CIRC      36

 25           KK      D2
 26           KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
 27           DT     D2S
 28           DI       0      71     300    3000
 29           DQ       0       0     229    2929

 30           KK      R2
 31           KM       ROUTE FLOWS FROM MC KELLIPS AND RECKER TO R.W.C.D. AT MC KELLIPS
 32           RK   10300  0.0110   0.012           CIRC      39

 33           KK      R3
 34           KM       ROUTE FLOWS FROM MC KELLIPS TO BROWN ALONG R.W.C.D.
 35           RK    6000  0.0001   0.030           TRAP      80     3.0

 36           KK   SUB04
 37           KM       LOCAL RUNOFF TO 0.5 MI. WEST OF BUSH HWY.
 38           PR      10
 39           PW       1
 40           PT       1
 41           PW       1
 42           BA    1.02
 43           LS           83.6
 44           UK     800   0.014   0.200     100
 45           RK    7000   0.014   0.035    0.17    TRAP    15.0     1.5
 46           RK    2640  0.0092   0.012           CIRC      39
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK     D4
  48          KM       DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN PIPE CAPACITY
  49          DT    D4S
  50          DI      0      94     300    3000
  51          DQ      0       0     216    2916

  52          KK     R4
  53          KM       ROUTE FLOWS FROM 0.5 MI. WEST OF POWER TO RECKER ROAD
  54          RK   2640  0.0080   0.012           CIRC      39

  55          KK   SUB06
  56          KM       LOCAL RUNOFF TO BROWN AND RECKER ROADS
  57          BA    0.5
  58          LS            84
  59          UK    200   0.005   0.200     100
  60          RK   2640   0.009   0.016   0.025    TRAP    40.0    0.01
  61          RK   5280   0.005   0.016           TRAP    60.0    0.01

  62          KK    C06
  63          KM       COMBINE FLOWS AT BROWN AND RECKER ROADS
  64          HC      2

  65          KK     D6
  66          KM       DIVERT FLOWS IN EXCESS OF 39" STORM DRAIN PIPE CAPACITY
  67          DT    D6S
  68          DI      0     137     300    3000
  69          DQ      0       0     163    2863

  70          KK   RETD2
  71          KM       RETRIEVE FLOWS FROM D2
  72          DR    D2S

  73          KK    RD2
  74          KM       ROUTE D2S FLOW TO BROWN AND RECKER ROADS
  75          RK   5280   0.005   0.016           TRAP    40.0     0.01

  76          KK    C07
  77          KM       COMBINE FLOWS AT BROWN AND RECKER
  78          HC      2

  79          KK     R7
  80          KM       ROUTE FLOWS FROM RECKER TO HIGLEY ALONG BROWN
  81          RK   5280  0.0087   0.012           CIRC      48

  82          KK   SUB08
  83          KM       LOCAL RUNOFF TO BROWN AND HIGLEY ROADS
  84          BA   0.95
  85          LS            83
  86          UK    110   0.005   0.200     100
  87          RK   3090   0.008   0.016    0.16    TRAP    40.0    0.01
  88          RK   2800   0.015   0.200            TRAP     100      20
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 89           KK   BA50B
 90           KM       BASIN FLOW 50-YEAR RETENTION
 91           RS      1    STOR     0.0
 92           SV      0      10      26      50      75
 93           SE      0       1    2.26    3.26     3.5
 94           SQ      0       2       5     800    1100

 95           KK    C08
 96           KM       COMBINE FLOWS AT HIGLEY AND BROWN
 97           HC      2

 98           KK     D8
 99           KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
100           DT    DB5
101           DI      0     138     300    3000
102           DQ      0       0     162    2862

103           KK     R8
104           KM       ROUTE FLOWS FROM HIGLEY TO R.W.C.D.
105           RK    4400   0.008   0.012           CIRC      48

106           KK   SUB10
107           KM       LOCAL RUNOFF TO BROWN ROAD AND R.W.C.D.
108           BA    0.44
109           LS             85                      79
110           UK     110   0.005   0.200      65
111           UK    1325   0.010   0.200      35
112           RK    2600   0.005   0.016    0.11    TRAP      40    0.01
113           RK    4400   0.007   0.020            TRAP     100    0.01

114           KK    CD10
115           KM       COMBINE FLOWS AT BROWN AND R.W.C.D.
116           HC      2

117           KK    CD11
118           KM       COMBINE FLOWS IN R.W.C.D. AT BROWN ROAD
119           HC      2

120           KK    R11
121           KM       ROUTE FLOWS IN R.W.C.D. TO UNIVERSITY
122           RK    4550  0.0001   0.030            TRAP      80       3

123           KK   SUB12
124           KM       LOCAL RUNOFF TO R.W.C.D. AT UNIVERSITY
125           BA    0.61
126           LS           81.8
127           UK     110   0.005    0.20     100
128           RK    2800  0.0085   0.016    0.12    TRAP      40    0.01
129           RK    5800  0.0001   0.030            TRAP      80       3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 130          KK   CO12
 131          KM       COMBINE FLOWS IN R.W.C.D. U/S OF UNIVERSITY
 132          HC      2

 133          KK  SUB14
 134          KM       LOCAL RUNOFF TO ADOBE AND RECKER
 135          BA   0.25
 136          LS          84.5
 137          UK    350   0.005   0.200     100
 138          RK   2640  0.0076   0.030   0.035    TRAP    40.0    0.01
 139          RK   2640  0.0061   0.016           TRAP    40.0    0.01

 140          KK  RETD6S
 141          KM       RETRIEVE D6S FLOWS
 142          DR    D6S

 143          KK    RD6
 144          KM       ROUTE D6S FLOWS TO ADOBE
 145          RK   2640  0.0061   0.016           TRAP    40.0    0.01

 146          KK   CO14
 147          KM       COMBINE FLOWS AT ADOBE
 148          HC      2

 149          KK    D14
 150          KM       DIVERT FLOWS TO SOUTH ALONG RECKER ROAD
 151          DT   D14S
 152          DI      0     100    1000
 153          DQ      0      47     470

 154          KK    R14
 155          KM       ROUTE FLOWS ALONG ADOBE TO HIGLEY
 156          RK   5280  0.0076   0.016           TRAP    40.0    0.01

 157          KK  SUB16
 158          KM       LOCAL RUNOFF TO HIGLEY AND ADOBE
 159          BA    0.5
 160          LS            86
 161          UK    110   0.005    0.20     100
 162          RK   2640   0.005   0.016   0.125    TRAP    40.0    0.01
 163          RK   5280  0.0076   0.016           TRAP    40.0    0.01

 164          KK  BAS16
 165          KM       BASIN FOR 50-YEAR RETENTION
 166          RS      1    STOR      0
 167          SV      0      15     50     100     175
 168          SQ      0       1    2.6     3.6     4.0
 169          SE      0       2      5     800    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  170         KK    CO16
  171         KM        COMBINE FLOWS ALONG ADOBE AT HIGLEY
  172         HC       2

  173         KK  RETDBS
  174         KM        RETRIEVE DBS FLOWS
  175         DR     DBS

  176         KK     RD8
  177         KM        ROUTE DBS FLOW TO ADOBE
  178         RK    2640  0.0038   0.016            TRAP    40.0    0.01

  179         KK    CO17
  180         KM        COMBINE FLOW IN HIGLEY AT ADOBE
  181         HC       2

  182         KK     R17
  183         KM        ROUTE FLOWS ALONG HIGLEY TO UNIVERSITY
  184         RK    2640  0.0061   0.016            TRAP    40.0    0.01

  185         KK   SUB18
  186         KM        LOCAL FLOWS TO 1/8 MI EAST OF HAWES ALONG UNIVERSITY
  187         BA    0.28
  188         LS              83
  189         UK     350  0.0075   0.200     100
  190         RK    2000   0.015   0.050    0.03    TRAP      20      10
  191         RK    4000  0.0067   0.012            CIRC      30

  192         KK     D18
  193         KM        DIVERT FLOWS IN EXCESS OF 27" STORM DRAIN CAPACITY
  194         DT    D18S
  195         DI       0      30     134    2000
  196         DQ       0       0     104    1970

  197         KK     R18
  198         KM        ROUTE FLOWS TO 1/4 MI. WEST OF SOSSAMAN ROAD
  199         RK    7700  0.0053   0.012            CIRC      48

  200         KK   SUB20
  201         KM        LOCAL RUNOFF TO 1/4 MI WEST OF SOSSAMAN
  202         BA    0.98
  203         LS              83
  204         UK     350   0.014   0.200     100
  205         RK    5500   0.015   0.050    0.04    TRAP      20      10
  206         RK    7700  0.0053   0.012            CIRC      48

  207         KK    CO20
  208         KM        COMBINE FLOWS 1/8 MI WEST OF SOSSAMAN ROAD
  209         HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 210          KK     D20
 211          KM        DIVERT FLOWS IN EXCESS OF 48" PIPE
 212          DT    D20S
 213          DI       0     127    1240    3000
 214          DQ       0       0    1113    2873

 215          KK     R20
 216          KM        ROUTE FLOWS TO BUSH/POWER ROAD
 217          RK    4100  0.0046   0.012           CIRC      60

 218          KK   SUB22
 219          KM        LOCAL RUNOFF TO BUSH/POWER AND UNIVERSITY
 220          BA    0.75
 221          LS              83
 222          UK     350   0.014   0.200     100
 223          RK    7500  0.0147   0.050    0.08    TRAP      20      10
 224          RK    4100  0.0046   0.012           CIRC      60

 225          KK    CO22
 226          KM        COMBINE FLOWS AT BUSH/POWER AND UNIVERSITY
 227          HC       2

 228          KK     D22
 229          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
 230          DT    D22S
 231          DI       0     197     770    3000
 232          DQ       0       0     573    2803

 233          KK    D22B
 234          KM        DIVERT FLOW IN EXCESS OF 48" PIPE (D/S) INTO REG. BASIN
 235          KO       3
 236          DT   RBAS1
 237          DI       0     195     300    3000
 238          DQ       0       0     105    2805

 239          KK     R22
 240          KM        ROUTE FLOWS TO 72ND STREET
 241          RK    2640  0.0058   0.012           CIRC      60

 242          KK   SUB24
 243          KM        LOCAL RUNOFF TO 72ND STREET AT UNIVERSITY
 244          BA    0.81
 245          LS           83.5
 246          UK     350   0.014   0.200     100
 247          RK    2250   0.011   0.050    0.05    TRAP      20      10
 248          RK    2640  0.0058   0.012           CIRC      60

 249          KK    CO24
 250          KM        COMBINE FLOWS AT 72ND STREET
 251          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK     D24
 253          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
 254          DT    D24S
 255          DI       0     179     450    3000
 256          DQ       0       0     271    2821

 257          KK     R24
 258          KM        ROUTE FLOWS TO RECKER ALONG UNIVERSITY
 259          RK    2640  0.0054   0.012           CIRC      66

 260          KK   SUB26
 261          KM        LOCAL RUNOFF TO RECKER AND UNIVERSITY
 262          BA    1.19
 263          LS           84.5
 264          UK     350    0.01   0.200     100
 265          RK   13700   0.012   0.050    0.20    TRAP      20      10
 266          RK    2640  0.0054   0.012           CIRC      66

 267          KK  RETD4S
 268          KM        RETRIEVE D4S FLOWS
 269          DR     D4S

 270          KK     RD4
 271          KM        ROUTE D4S FLOW TO UNIVERSITY
 272          RK    6760  0.0081   0.030           TRAP      32       4

 273          KK    CD26
 274          KM        COMBINE FOWS AT UNIVERSITY AND RECKER
 275          HC       2

 276          KK    CD27
 277          KM        COMBINE FLOWS AT UNIVERSITY AND RECKER
 278          HC       2

 279          KK     D28
 280          KM        DIVERT FLOWS INTO DETENTION BASIN (Q>66" PIPE)
 281          KD       3
 282          DT    D28B
 283          DI       0     276     680    3000
 284          DQ       0       0     404    2724

 285          KK  RED14S
 286          KM        RETRIEVE D14S FLOWS
 287          DR    D14S

 288          KK    RD14
 289          KM        ROUTE D14S FLOWS TO UNIVERSITY AND RECKER
 290          RK    2640  0.0061   0.016           TRAP      40    0.01
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  291         KK    CO28
  292         KM        COMBINE FLOWS AT UNIVERSITY AND RECKER
  293         HC       2

  294         KK     R28
  295         KM        ROUTE FLOWS TO 1/2 MI WEST OF RECKER
  296         RK    2640  0.0060   0.012           CIRC      66

  297         KK   SUB30
  298         KM        LOCAL RUNOFF TO 56TH STREET
  299         BA   0.055
  300         LS           85.5
  301         UK     110   0.005   0.200     100
  302         RK    1920   0.010   0.016   0.027    TRAP      40    0.01
  303         RK    2640  0.0060   0.012           CIRC      66

  304         KK    CO30
  305         KM        COMBINE FLOWS AT 56TH STREET
  306         HC       2

  307         KK     D30
  308         KM        DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
  309         DT    D30S
  310         DI       0     279     470    3000
  311         DQ       0       0     191    2721

  312         KK    RO30
  313         KM        ROUTE FLOWS TO HIGLEY ROAD
  314         RK    2640  0.0065   0.012           CIRC      72

  315         KK   SUB32
  316         KM        LOCAL RUNOFF TO UNIVERSITY AND HIGLEY
  317         BA    0.45
  318         LS            86
  319         UK     110   0.005   0.200     100
  320         RK    5280  0.0076   0.016   0.050    TRAP      40    0.01
  321         RK    2640  0.0056   0.016           TRAP      40    0.01

  322         KK    CO32
  323         KM        COMBINE FLOWS AT HIGLEY AND UNIVERSITY
  324         HC       2

  325         KK    CO33
  326         KM        COMBINE FLOWS AT HIGLEY AND UNIVERSITY (TOTAL)
  327         HC       2

  328         KK     D33
  329         KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
  330         DT    D33S
  331         DI       0     324     570    3000
  332         DQ       0       0     246    2676
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 333          KK     R33
 334          KM        ROUTE FLOWS TO R.W.C.D. ALONG UNIVERSITY
 335          RK    1800  0.0069   0.012           CIRC      72

 336          KK    CO34
 337          KM        COMBINE FLOWS IN R.W.C.D. AT UNIVERSITY
 338          HC       2

 339          KK     R34
 340          KM        ROUTE R.W.C.D. FLOWS TO APACHE TRAIL
 341          RK    3340 0.00015   0.030           TRAP     110       3

 342          KK  RED33S
 343          KM        RETRIEVE D33S FLOWS
 344          DR    D33S

 345          KK   RD33S
 346          KM        ROUTE D33S FLOWS TO R.W.C.D. ALONG HIGLEY STORM DRAIN
 347          RK    2640  0.0061   0.012           CIRC      48

 348          KK    CO35
 349          KM        COMBINE FLOW IN R.W.C.D. AT APACHE TRAIL
 350          HC       2

 351          KK     R35
 352          KM        ROUTE R.W.C.D. FLOWS TO BROADWAY
 353          RK    2672  0.0003   0.027           TRAP      90       3

 354          KK   SUB36
 355          KM        LOCAL RUNOFF TO HAWES ROAD
 356          BA    0.94
 357          LS           85.3
 358          UK     300   0.006    0.20     100
 359          RK    5840  0.0086   0.026    0.10    TRAP      30     2.5
 360          RK    5280  0.0065   0.012           CIRC      48

 361          KK  RED18S
 362          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D18
 363          DR    D18S

 364          KK    RD18
 365          KM        ROUTE D18S FLOWS TO BROADWAY
 366          RK    5280  0.0091   0.016           TRAP      40    0.01

 367          KK    CO36
 368          KM        COMBINE FLOWS AT BROADWAY
 369          HC       2

 370          KK     D36
 371          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
 372          DT    D36S
 373          DI       0     130     290    3000
 374          DQ       0       0     160    2870
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  375         KK    R36
  376         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN ROAD
  377         RK   5280  0.0068   0.012           CIRC      66

  378         KK   SUB38
  379         KM       LOCAL RUNOFF TO SOSSAMAN ROAD
  380         BA   0.84
  381         LS          86.7
  382         UK    150   0.005   0.200     100
  383         RK   5680  0.0045   0.016    0.08   TRAP      40    0.01
  384         RK   5280  0.0068   0.012           CIRC      66

  385         KK   CO38
  386         KM       COMBINE FLOWS AT SOSSAMAN ROAD
  387         HC      2

  388         KK    D38
  389         KM       DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
  390         DT   D38S
  391         DI      0     277     590    3000
  392         DQ      0       0     313    2723

  393         KK    R38
  394         KM       ROUTE FLOWS FROM 74TH STREET
  395         RK   3960  0.0068   0.012           CIRC      72

  396         KK  RED20S
  397         KM       RETRIEVE FLOWS FROM D20S
  398         DR   D20S

  399         KK   RD20
  400         KM       ROUTE D20S FLOWS TO 74TH STREET AND BROADWAY
  401         RK   5280   0.007   0.016           TRAP      40    0.01

  402         KK   SUB40
  403         KM       LOCAL RUNOFF TO 74TH STREET AND BROADWAY
  404         BA   0.77
  405         LS          85.6
  406         UK    260   0.006   0.200     100
  407         RK   7000  0.0069   0.025     0.1   TRAP      40    0.01
  408         RK   3960  0.0068   0.012           CIRC      72

  409         KK   CO40
  410         KM       COMBINE FLOWS IN SUB 40
  411         HC      2

  412         KK   CO41
  413         KM       COMBINE FLOWS AT 74TH STREET AND BROADWAY
  414         HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  415         KK     D41
  416         KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
  417         DT    D41S
  418         DI       0     355     700    3000
  419         DQ       0       0     345    2645

  420         KK     R41
  421         KM        ROUTE FLOWS FROM 74TH STREET TO POWER ROAD
  422         RK    1320   0.005   0.012           CIRC      78

  423         KK   SUB42
  424         KM        LOCAL RUNOFF TO POWER AND BROADWAY
  425         BA    0.45
  426         LS            84.4
  427         UK     350   0.011   0.200     100
  428         RK    5500  0.0090   0.030     0.1   TRAP      20      10
  429         RK    1320   0.005   0.012           CIRC      78

  430         KK  RED22S
  431         KM        RETRIEVE DIVERTED FLOWS FROM D22
  432         DR    D22S

  433         KK    DR22
  434         KM        ROUTE D22S TO BROADWAY
  435         RK    5280  0.0056   0.016           TRAP      40    0.01

  436         KK    CD42
  437         KM        COMBINE FLOWS AT BROADWAY
  438         HC       2

  439         KK    CD43
  440         KM        COMBINE FLOWS AT POWER ROAD AND BROADWAY
  441         HC       2

  442         KK  DIV43S
  443         KM        DIVERT FLOWS IN EXCESS OF 78" STORM DRAIN CAPACITY
  444         DT    D43S
  445         DI       0     400     800    3000
  446         DQ       0       0     400    2600

  447         KK    D43B
  448         KM        DIVERT FLOWS IN EXCESS OF 110 CFS INTO REG. BASIN
  449         KD       3
  450         DT   DBA52
  451         DI       0     110     250    3000
  452         DQ       0       0     140    2890

  453         KK     R43
  454         KM        ROUTE FLOWS FROM POWER ROAD TO 64TH STREET
  455         RK    2640  0.0066   0.016           TRAP    12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 456          KK   SUB44
 457          KM        LOCAL RUNOFF TO BROADWAY
 458          BA    0.48
 459          LS           85.4
 460          UK     230   0.007   0.200     100
 461          RK    2640   0.011   0.016   0.044    TRAP      40    0.01
 462          RK    7900   0.006   0.016            TRAP      60    0.01

 463          KK  RED24S
 464          KM        RETRIEVE FLOWS DIVERTED FROM D24S
 465          DR    D24S

 466          KK    RD24
 467          KM        ROUTE D24S FLOWS TO BROADWAY
 468          RK    5280   0.006   0.016            TRAP      40    0.01

 469          KK    CO44
 470          KM        COMBINE FLOWS IN 64TH STREET
 471          HC       2

 472          KK    CO45
 473          KM        COMBINE FLOWS AT BROADWAY AND 64TH STREET
 474          HC       2

 475          KK     D45
 476          KM        DIVERT FLOWS IN EXCESS OF TRAP
 477          KD       3
 478          DT    D45B
 479          DI       0       1     500    3000
 480          DQ       0       0     499    2999

 481          KK     R45
 482          KM        ROUTE FLOWS TO RECKER ROAD
 483          RK    2640  0.0066   0.016            TRAP    12.0     1.5

 484          KK   SUB48
 485          KM        LOCAL RUNOFF TO RECKER ROAD
 486          BA    0.52
 487          LS             86
 488          UK     150   0.007   0.200     100
 489          RK    2640   0.007   0.016    0.04    TRAP      40    0.01
 490          RK    5280   0.007   0.016            TRAP      60    0.01

 491          KK    CO49
 492          KM        COMBINE FLOWS AT RECKER AND BROADWAY
 493          HC       2

 494          KK     R49
 495          KM        ROUTE FLOWS FROM RECKER TO R.W.C.D.
 496          RK    3200  0.0066   0.016            TRAP    12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 497          KK   SUB50
 498          KM        LOCAL RUNOFF TO R.W.C.D. AND BROADWAY
 499          BA     1.0
 500          LS            85.6
 501          UK     110   0.005   0.200     100
 502          RK    5280  0.0056   0.016     0.2    TRAP      40    0.01
 503          RK    3200  0.0066   0.016            TRAP    12.0     1.5

 504          KK  RED30S
 505          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D30S
 506          DR    D30S

 507          KK    RD30
 508          KM        ROUTE FLOWS FROM D30S
 509          RK    5280  0.0056   0.016            TRAP      40    0.01

 510          KK    CO50
 511          KM        COMBINE FLOWS IN SUB50
 512          HC       2

 513          KK    CO51
 514          KM        COMBINE FLOWS IN BROADWAY AT R.W.C.D.
 515          HC       2

 516          KK    CO52
 517          KM        COMBINE FLOWS IN R.W.C.D. AT BROADWAY
 518          HC       2

 519          KK     R52
 520          KM        ROUTE FLOWS FROM BROADWAY TO FREEWAY ALONG R.W.C.D.
 521          RK    5700  0.0004   0.025            TRAP     120     3.0

 522          KK   SUB54
 523          KM        LOCAL RUNOFF TO R.W.C.D. AT FREEWAY  (LEISURE WORLD)
 524          BA    1.56
 525          LS            84.9
 526          UK     110   0.005   0.200     100
 527          RK    7300   0.006   0.070    0.20    TRAP      40    0.01
 528          RK    6870  0.0004   0.025            TRAP     120     3.0

 529          KK   RET30
 530          KM        BASIN FOR 50-YEAR RETENTION BASIN
 531          RS     1.0    STOR     0.0
 532          SV       0      25      61      67      75      78
 533          SE       0     1.3     2.6     3.1     3.6     3.7
 534          SQ       0       0       0     275     800     925

 535          KK    CO62
 536          KM        COMBINE FLOWS IN R.W.C.D. U/S OF FREEWAY
 537          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  538         KK   SUB56
  539         KM        LOCAL RUNOFF TO SOUTHERN AND 72ND
  540         BA    1.19
  541         LS           86.1
  542         UK     110   0.005    0.20     100
  543         RK    5280   0.004   0.026    0.12    TRAP     120       5
  544         RK    3650  0.0064   0.012            CIRC      54

  545         KK  RET38S
  546         KM        RETRIEVE DIVERTED FLOWS FROM D38S
  547         DR    D38S

  548         KK    RD38
  549         KM        ROUTE FLOWS TO SOUTHERN THROUGH SUB56
  550         RK    8000  0.0049   0.026            TRAP     120       5

  551         KK    CD56
  552         KM        COMBINE FLOWS AT SOUTHERN AND 72ND STREET
  553         HC       2

  554         KK     D56
  555         KM        DIVERT FLOWS IN EXCESS OF 54" STORM DRAIN CAPACITY
  556         DT    D56S
  557         DI       0     180     480    3000
  558         DQ       0       0     300    2820

  559         KK  RET41S
  560         KM        RETRIEVE FLOWS DIVERTED FROM D41S
  561         DR    D41S

  562         KK    RD41
  563         KM        ROUTE D41S FLOWS TO SOUTHERN IN 72ND STREET
  564         RK    5280   0.004   0.016            TRAP      40    0.01

  565         KK    CD57
  566         KM        COMBINE FLOW AT 72ND AND SOUTHERN
  567         HC       2

  568         KK     D57
  569         KM        DIVERT FLOWS IN EXCESS OF 54" STORM DRAIN CAPACITY
  570         DT    D57S
  571         DI       0     180     600    3000
  572         DQ       0       0     420    2820

  573         KK     R57
  574         KM        ROUTE FLOWS FROM 72ND ST. TO POWER ROAD
  575         RK    2200  0.0075   0.012            CIRC      54

  576         KK  RET43S
  577         KM        RETRIEVE DIVERTED FLOWS FROM D43S
  578         DR    D43S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  579         KK   RD43
  580         KM       ROUTE DIVERTED FLOWS TO SOUTHERN
  581         RK   6600   0.003   0.035           TRAP    200      10

  582         KK  SUB58
  583         KM       LOCAL RUNOFF TO POWER ROAD AND SOUTHERN
  584         BA   0.38
  585         LS           84.7
  586         UK    110   0.005   0.200     100
  587         RK   6600   0.003   0.035    0.12   TRAP    200      10
  588         RK   2200  0.0075   0.012           CIRC     54

  589         KK   CO58
  590         KM       COMBINE FLOWS IN SUB 58
  591         HC      2

  592         KK   CO59
  593         KM       COMBINE FLOWS AT POWER ROAD
  594         HC      2

  595         KK    D59
  596         KM       DIVERT FLOWS IN EXCESS OF 54" STORM DRAIN CAPACITY
  597         DT   D59S
  598         DI      0     194     680    3000
  599         DQ      0       0     486    2806

  600         KK    R59
  601         KM       ROUTE FLOWS FROM POWER ROAD TO R.W.C.D.
  602         RK   6500  0.0054   0.012           CIRC     60

  603         KK   CO64
  604         KM       COMBINE FLOWS IN R.W.C.D. AT SOUTHERN
  605         HC      2

  606         KK    R64
  607         KM       ROUTE R.W.C.D. FLOWS TO FREEWAY
  608         RK   3170  0.0004   0.025           TRAP    120     3.0

  609         KK  SUB66
  610         KM       LOCAL RUNOFF TO FREEWAY AND 72ND STREET
  611         BA   0.31
  612         LS           83.8
  613         UK    350   0.006   0.200     100
  614         RK   1600   0.008   0.035    0.03   TRAP      2       4
  615         RK   3200   0.004   0.016           TRAP     10       4

  616         KK  RET56S
  617         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D56S
  618         DR   D56S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  619         KK   RD56
  620         KM       ROUTE DIVERTED FLOWS TO FREEWAY
  621         RK   1600   0.008   0.035           TRAP      2       4

  622         KK   CO66
  623         KM       COMBINE FLOWS AT FREEWAY AND 72ND STREET
  624         HC      2

  625         KK  RET57S
  626         KM       RETRIEVE DIVERTED FLOWS FROM D57S
  627         DR   D57S

  628         KK   RD57
  629         KM       ROUTE FLOWS TO FREEWAY
  630         RK   1600   0.008   0.035           TRAP      2       4

  631         KK   CO67
  632         KM       COMBINE FLOWS IN FREEWAY AT 72ND
  633         HC      2

  634         KK    R67
  635         KM       ROUTE FLOWS IN FREEWAY TO POWER ROAD
  636         RK   2400   0.004   0.016           TRAP     10       4

  637         KK  SUB68
  638         KM       LOCAL RUNOFF TO POWER ROAD
  639         BA   1.19
  640         LS           84.3
  641         UK    300   0.007    0.20     100
  642         RK   1600   0.008   0.030    0.02   TRAP     11       3
  643         RK   2750   0.004   0.016           TRAP     12       4

  644         KK  RET59S
  645         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D59S
  646         DR   D59S

  647         KK   RD59
  648         KM       ROUTE D59S FLOWS TO FREEWAY
  649         RK   1600   0.008   0.030           TRAP     11     3.0

  650         KK   CO68
  651         KM       COMBINE FLOW IN SUB68
  652         HC      2

  653         KK   CO69
  654         KM       COMBINE FLOWS AT FREEWAY AND POWER ROAD
  655         HC      2

  656         KK  DIVSUP
  657         KM       DIVERT FLOW INTO PEAK DIVERSION BASINS IN SR360 ROW
  658         KO      3
  659         DT  SUPBAS
  660         DI      0    1500    3000
  661         DQ      0       0    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 662          KK    R69
 663          KM       ROUTE FLOWS FROM POWER ROAD TO R.W.C.D. IN FREEWAY
 664          RK   5280  0.0015   0.016          TRAP    12.0     2.0

 665          KK   SUB70
 666          KM       LOCAL RUNOFF TO R.W.C.D. AND FREEWAY
 667          BA   0.42
 668          LS          76.3
 669          UK   1300   0.002   0.050     100
 670          RK   2640   0.003   0.035    0.11    TRAP      10       3
 671          RK   5280  0.0015   0.016           TRAP      12       2

 672          KK   CD70
 673          KM       COMBINE FLOWS AT R.W.C.D. IN FREEWAY CHANNEL
 674          HC      2

 675          KK   CD71
 676          KM       COMBINE FLOWS IN R.W.C.D.  AND FREEWAY
 677          HC      2

 678          KK    R71
 679          KM       ROUTE R.W.C.D. FLOWS TO BASELINE
 680          RK   1600  0.0003   0.025           TRAP     140   3.0

 681          KK   SUB72
 682          KM       LOCAL RUNOFF TO POWER AND BASELINE
 683          BA   0.61
 684          LS          80.3
 685          UK    870   0.006   0.200     100
 686          RK   2500  0.0020   0.040    0.04    TRAP       2       4
 687          RK   6200  0.0050   0.012           CIRC      27

 688          KK    D72
 689          KM       DIVERT FLOWS IN EXCESS OF 27" STORM DRAIN
 690          DT   D72S
 691          DI      0      24     420    3000
 692          DQ      0       0     396    2976

 693          KK    R72
 694          KM       ROUTE FLOWS TO R.W.C.D.
 695          RK   3200  0.0050   0.012           CIRC      30

 696          KK   SUB74
 697          KM       LOCAL RUNOFF TO R.W.C.D. AND BASELINE
 698          BA   0.51
 699          LS             75
 700          UK    870   0.006   0.200     100
 701          RK   2500  0.0020   0.040    0.04    TRAP       2       4
 702          RK   3200  0.0050   0.012           CIRC      30
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 703          KK   CO74
 704          KM       COMBINE FLOWS AT R.W.C.D. IN BASELINE
 705          HC      2

 706          KK   CO75
 707          KM       COMBINE FLOWS IN R.W.C.D. AT BASELINE
 708          HC      2

 709          KK    R75
 710          KM       ROUTE FLOWS FROM BASELINE TO GUADALUPE
 711          RK   6070  0.0003   0.025           TRAP    140     3.0

 712          KK  SUB76
 713          KM       LOCAL RUNOFF TO GUADALUPE IN R.W.C.D.
 714          BA   0.29
 715          LS            75
 716          UK     50   0.006   0.025     100
 717          RK   1000   0.005   0.025   0.005   TRAP      2       2
 718          RK   6070  0.0003   0.025           TRAP    140       3

 719          KK   CO76
 720          KM       COMBINE FLOWS IN R.W.C.D. U/S OF GUADALUPE
 721          HC      2

 722          KK  SUB78
 723          KM       LOCAL RUNOFF TO 0.75 MI WEST OF ELLSWORTH
 724          BA   0.14
 725          LS            83
 726          UK    700   0.010   0.200     100
 727          RK   1300   0.007   0.025    0.02   TRAP     40    0.01
 728          RK   3150  0.0065   0.012           CIRC     21

 729          KK    D78
 730          KM       DIVERT FLOWS IN EXCESS OF 21" STORM DRAIN CAPACITY
 731          DT   D78S
 732          DI      0      11     250    3000
 733          DQ      0       0     239    2989

 734          KK    R78
 735          KM       ROUTE FLOWS TO HAWES
 736          RK   2130  0.0065   0.012           CIRC     30

 737          KK  SUB80
 738          KM       LOCAL RUNOFF TO HAWES
 739          BA   0.86
 740          LS           84.1
 741          UK   1600  0.0075   0.200     100
 742          RK   8300   0.008   0.082    0.15   TRAP     40    0.01
 743          RK   2130  0.0065   0.012           CIRC     30
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  744         KK  RET36S
  745         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D36S
  746         DR    D36S

  747         KK    RD36
  748         KM       ROUTE FLOWS D36S TO SOUTHERN
  749         RK    5280  0.0070   0.016           TRAP      15     1.5

  750         KK    CD80
  751         KM       COMBINE FLOWS AT HAWES
  752         HC       2

  753         KK    CD81
  754         KM       COMBINE FLOWS AT HAWES AND SOUTHERN
  755         HC       2

  756         KK     D81
  757         KM       DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
  758         DT    D81S
  759         DI       0      38     490    3000
  760         DQ       0       0     452    2962

  761         KK     R81
  762         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  763         RK    4000  0.0065   0.012           CIRC      48

  764         KK   SUB82
  765         KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND SOUTHERN
  766         BA    0.43
  767         LS           85.1
  768         UK     110   0.005   0.200     100
  769         RK    2600  0.0038   0.016    0.05    TRAP      40    0.01
  770         RK    4000  0.0065   0.012           CIRC      48

  771         KK    CD82
  772         KM       COMBINE FLOWS AT SOSSAMAN CHANNEL AND SOUTHERN
  773         HC       2

  774         KK     R82
  775         KM       ROUTE FLOWS FROM SOUTHERN TO FREEWAY
  776         RK    2200  0.0045   0.030           TRAP      25     1.5

  777         KK   SUB84
  778         KM       LOCAL RUNOFF TO HAWES AND THE FREEWAY
  779         BA    0.35
  780         LS           86.2
  781         UK     500   0.010   0.200     100
  782         RK    3000  0.0087   0.040    0.05    TRAP     2.0     4.0
  783         RK    5280   0.004   0.016           TRAP     5.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 784          KK  RET78S
 785          KM       RETRIEVE DIEVERTED HYDROGRAPH FROM D78S
 786          DR    D78S

 787          KK    DR78
 788          KM       ROUTE D78S FLOWS TO FREEWAY
 789          RK    3000  0.0087   0.040           TRAP     2.0     4.0

 790          KK    CO84
 791          KM       COMBINE FLOWS AT HAWES
 792          HC       2

 793          KK  RET81S
 794          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D81S
 795          DR    D81S

 796          KK    RD81
 797          KM       ROUTE D81S FLOWS TO FREEWAY
 798          RK    3100  0.0061   0.016           TRAP      40    0.01

 799          KK    CO83
 800          KM       COMBINE FLOWS AT HAWES
 801          HC       2

 802          KK     R85
 803          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 804          RK    5280   0.004   0.016           TRAP      28       4

 805          KK   SUB86
 806          KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND FREEWAY
 807          BA    0.46
 808          LS            86.2
 809          UK     150   0.005   0.200     100
 810          RK    3100  0.0061   0.016   0.035    TRAP      40    0.01
 811          RK    4350   0.004   0.016           TRAP      28       4

 812          KK   RET86
 813          KM       BASIN FOR 50 YEAR RETENTION
 814          RS       1    STOR       0
 815          SV       0       7    17.5      22      27      28
 816          SE       0     1.3     2.6     3.1     3.6     3.7
 817          SQ       0       0       0      70     200     240

 818          KK    CO86
 819          KM       COMBINE FLOWS AT SOSSAMAN IN FREEWAY
 820          HC       2

 821          KK    CO87
 822          KM       COMBINE FLOWS IN SOSSAMAN AT FREEWAY
 823          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 824          KK     R87
 825          KM        ROUTE FLOWS FROM FREEWAY TO BASELINE
 826          RK    3800  0.0040   0.030           TRAP      50     3.0

 827          KK   SUB88
 828          KM        LOCAL RUNOFF TO HAWES AND BASELINE
 829          BA    0.53
 830          LS              75
 831          UK     967  0.0065   0.200     100
 832          RK    2300  0.0087   0.040    0.13    TRAP       2       4
 833          RK    4200   0.006   0.012            CIRC      21

 834          KK     D88
 835          KM        DIVERT FLOWS IN EXCESS OF 21" STORM DRAIN CAPACITY
 836          DT    D88S
 837          DI       0      10     440    3000
 838          DQ       0       0     430    2990

 839          KK     R88
 840          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 841          RK    5000   0.006   0.012            CIRC      33

 842          KK   SUB90
 843          KM        LOCAL RUNOFF TO SOSSAMAN CHANNEL
 844          BA    0.47
 845          LS            86.3
 846          UK     967  0.0065   0.200     100
 847          RK    2300  0.0087   0.040    0.13    TRAP       2       4
 848          RK    5000   0.006   0.012            CIRC      33

 849          KK    CO90
 850          KM        COMBINE FLOWS AT SOSSAMAN IN BASELINE
 851          HC       2

 852          KK    CO91
 853          KM        COMBINE FLOWS IN SOSSAMAN AT BASELINE
 854          HC       2

 855          KK     R91
 856          KM        ROUTE FLOWS IN SOSSAMAN TO GUADALUPE
 857          RK    5300   0.038   0.030            TRAP      50     3.0

 858          KK   SUB92
 859          KM        LOCAL TO GUADALUPE
 860          BA     1.0
 861          LS            81.6
 862          UK    1750   0.005   0.200     100
 863          RK    4950  0.0051   0.040   0.072    TRAP     2.0     4.0
 864          RK    5280  0.0055   0.012            CIRC      30
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  865         KK  RET88S
  866         KM       RETRIEVE DIVERTED HYDROGRAPH FROM D88S
  867         DR   D88S

  868         KK   RD88
  869         KM       ROUTE D88S TO GUADALUPE
  870         RK   5280  .0051   .040          TRAP    2.0    4.0

  871         KK   CO92
  872         KM       COMBINE FLOWS AT GUADALUPE AND HAWES
  873         HC      2

  874         KK    D92
  875         KM       DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
  876         DT   D92S
  877         DI      0      30     420    3000
  878         DQ      0       0     390    2970

  879         KK    R92
  880         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  881         RK   5280  0.0045   0.012          CIRC     39

  882         KK   SUB94
  883         KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND GUADALUPE
  884         BA   0.96
  885         LS          80.1
  886         UK    930  0.005   0.200     100
  887         RK   4950  0.0051  0.028    0.09   TRAP     21       2
  888         RK   5280  0.0045  0.012          CIRC     39

  889         KK   CO94
  890         KM       COMBINE FLOWS AT SOSSAMAN AND GUADALUPE
  891         HC      2

  892         KK    D94
  893         KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
  894         DT   D94S
  895         DI      0      61     800    3000
  896         DQ      0       0     739    2939

  897         KK   CO95
  898         KM       COMBINE FLOWS IN SOSSAMAN AT GUADALUPE
  899         HC      2

  900         KK  DIVGUA
  901         KM       DIVERT FLOWS INTO REGIONAL BASIN AT GUADALUPE AND SOSSAMAN
  902         KO      3
  903         DT  GUABAS
  904         DI      0     630    1500    3000
  905         DQ      0       0     870    2370
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 906          KK    R95
 907          KM       ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D. ALONG GUADALUPE
 908          RK   5280  0.0048   0.016           TRAP    15.0     1.5

 909          KK  SUB96
 910          KM       LOCAL RUNOFF TO POWER AND GUADALUPE
 911          BA   1.04
 912          LS            75
 913          UK   1750   0.006   0.200     100
 914          RK   5000   0.005   0.040    0.07   TRAP       2       4
 915          RK   5280  0.0048   0.016           TRAP    15.0     1.5

 916          KK   CD96
 917          KM       COMBINE FLOWS IN GUADALUPE AT POWER
 918          HC      2

 919          KK  RET72
 920          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D72S
 921          DR   D72S

 922          KK   DR72
 923          KM       ROUTE D72S FLOWS TO GUADALUPE CHANNEL
 924          RK   5280  0.0022   0.035           TRAP       2       4

 925          KK   CD97
 926          KM       COMBINE FLOWS AT POWER AND GUADALUPE CHANNEL
 927          HC      2

 928          KK   CD98
 929          KM       COMBINE FLOWS IN R.W.C.D. AT GUADALUPE
 930          KO      3
 931          HC      2

 932          KK    R98
 933          KM       ROUTE R.W.C.D. FLOWS FROM GUADALUPE TO ELLIOT
 934          KO      3
 935          RK   5250  0.0003  0.0270           TRAP     140     3.0

 936          KK  SUB100
 937          KM       LOCAL RUNOFF TO ELLSWORTH AND APACHE TRAIL
 938          PR     10
 939          PW      1
 940          PT      1
 941          PW      1
 942          BA   0.82
 943          LS          86.5
 944          UK    150   0.005   0.200     100
 945          RK   3400  0.0088   0.016    0.12   TRAP      40    0.01
 946          RK   5280  0.0023   0.016           TRAP      23     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 947          KK  SUB102
 948          KM       LOCAL RUNOFF TO ELLSWORTH AT BROADWAY
 949          BA    0.18
 950          LS           87.2
 951          UK     150   0.005   0.200     100
 952          RK    1000   0.004   0.020    0.02    TRAP      40    0.01
 953          RK    5280  0.0066   0.012            CIRC      36

 954          KK   CD102
 955          KM       COMBINE FLOWS AT BROADWAY AND ELLSWORTH
 956          HC       2

 957          KK    R102
 958          KM       ROUTE FLOWS FROM BROADWAY TO SOUTHERN
 959          RK    5280  0.0023   0.016            TRAP    25.0     1.5

 960          KK  SUB104
 961          KM       LOCAL RUNOFF TO 0.67 MI SO. OF BROADWAY
 962          BA    0.55
 963          LS           86.3
 964          UK     150   0.005   0.200     100
 965          RK    2500   0.005   0.016    0.05    TRAP    40.0    0.01
 966          RK    5650  0.0071   0.035            TRAP      15     3.0

 967          KK   CD104
 968          KM       COMBINE FLOWS IN ELLSWORTH AT SOUTHERN
 969          HC       2

 970          KK  SUB106
 971          KM       LOCAL RUNOFF TO CRISMON AND BASELINE
 972          BA     1.0
 973          LS             83
 974          UK    1000   0.010   0.200     100
 975          RK    2750   0.018   0.040    0.05    TRAP    20.0     4.0
 976          RK    5280  0.0064   0.012            CIRC      36

 977          KK    D106
 978          KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
 979          DT   D106S
 980          DI       0      64     250    3000
 981          DQ       0       0     186    2936

 982          KK    R106
 983          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH
 984          RK    5280   0.006   0.012            CIRC      48

 985          KK  SUB108
 986          KM       LOCAL RUNOFF TO SOUTHERN AND ELLSWORTH
 987          BA    0.45
 988          LS           85.3
 989          UK     150   0.005   0.200     100
 990          RK    2800   0.007   0.025    0.05    TRAP      20       2
 991          RK    5280   0.006   0.012            CIRC      48
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  992         KK   CD108
  993         KM        COMBINE FLOWS IN SOUTHERN AVE
  994         HC       2

  995         KK    D108
  996         KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
  997         DT   D108S
  998         DI       0     122     440    3000
  999         DQ       0       0     318    2878

 1000         KK   CD109
 1001         KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT SOUTHERN
 1002         HC       2

 1003         KK    R109
 1004         KM        ROUTE FLOWS FROM SOUTHERN TO FREEWAY
 1005         RK    2300  0.0022   0.016            TRAP      25     1.5

 1006         KK  SUB110
 1007         KM       LOCAL RUNOFF TO FREEWAY AT CRISMON
 1008         BA    0.77
 1009         LS              85
 1010         UK    1250   0.010   0.200     100
 1011         RK    2300   0.009   0.040   0.015    TRAP     2.0     4.0
 1012         RK   10360   0.004   0.016            TRAP    10.0     2.0

 1013         KK  RET106
 1014         KM        RETRIEVE DIVERTED HYDROGRAPH FROM SOUTHERN
 1015         DR   D106S

 1016         KK   RD106
 1017         KM        ROUTE D106S FLOWS TO FREEWAY
 1018         RK    2300   0.009   0.014            TRAP     2.0     4.0

 1019         KK   CD110
 1020         KM        COMBINE FLOWS AT CRISMON IN FREEWAY
 1021         HC       2

 1022         KK    R110
 1023         KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
 1024         RK    5280   0.004   0.016            TRAP      16       2

 1025         KK  RET108
 1026         KM        RETRIEVE DIVERTED HYDROGRAPH FROM D108S
 1027         DR   D108S

 1028         KK   RD106
 1029         KM        ROUTE FLOWS DIVERTED FROM D108S TO FREEWAY
 1030         RK    2500   0.007   0.040            TRAP     2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1031          KK   CO111
1032          KM        COMBINE FLOWS IN FREEWAY CHANNEL
1033          HC       2

1034          KK  SUB112
1035          KM        LOCAL RUNOFF TO FREEWAY AT ELLSWORTH
1036          BA    0.47
1037          LS              83
1038          UK    1250   0.010   0.200     100
1039          RK    2500   0.007   0.040    0.05    TRAP     2.0     4.0
1040          RK    5280   0.004   0.016            TRAP    16.0     2.0

1041          KK   CO112
1042          KM        COMBINE FLOWS IN FREEWAY
1043          HC       2

1044          KK   CO113
1045          KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT FREEWAY
1046          HC       2

1047          KK  DIVELB
1048          KM        DIVERT FLOWS INTO REGIONAL BASIN AT ELLSWORTH AND SR360
1049          KO       3
1050          DT  ELBBAS
1051          DI       0     250     500    3000
1052          DQ       0       0     250    2750

1053          KK    R113
1054          KM        ROUTE FLOWS FROM FREEWAY TO BASELINE
1055          RK    3190  0.0022   0.016            TRAP    25.0     1.5

1056          KK  SUB114
1057          KM        LOCAL RUNOFF TO SIGNAL BUTTE AND BASELINE
1058          BA    0.70
1059          LS              83
1060          UK    1000   0.008   0.200     100
1061          RK    3200   0.012   0.040   0.046    TRAP     2.0     4.0
1062          RK    5280   0.005   0.012            CIRC      33

1063          KK    D114
1064          KM        DIVERT FLOWS IN EXCESS OF 33" STORM DRAIN CAPACITY
1065          DT   D114S
1066          DI       0      41     220    3000
1067          DQ       0       0     179    2959

1068          KK    R114
1069          KM        ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON ALONG BASELINE
1070          RK    5280   0.005   0.012            CIRC      48
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1071          KK  SUB116
1072          KM       LOCAL RUNOFF TO CRISMON AND BASELINE
1073          BA    0.58
1074          LS             83
1075          UK     500   0.008   0.200     100
1076          RK    3600   0.012   0.040   0.058   TRAP     2.0     4.0
1077          RK    5280   0.005   0.012           CIRC      48

1078          KK   CD116
1079          KM       COMBINE FLOWS AT CRISMON IN BASELINE
1080          HC       2

1081          KK    D116
1082          KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
1083          DT   D116S
1084          DI       0      88     400    3000
1085          DQ       0       0     312    2912

1086          KK    R116
1087          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG BASELINE
1088          RK    6300  0.0067   0.012           CIRC      48

1089          KK  SUB118
1090          KM       LOCAL RUNOFF TO ELLSWORTH
1091          BA    0.62
1092          LS             82
1093          UK     500   0.010   0.200     100
1094          RK    3000  0.0087   0.040   0.050   TRAP     2.0     4.0
1095          RK    6300  0.0067   0.012           CIRC      48

1096          KK   CD118
1097          KM       COMBINE FLOWS AT ELLSWORTH IN BASELINE
1098          HC       2

1099          KK    D118
1100          KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
1101          DT   D118S
1102          DI       0     130     760    3000
1103          DQ       0       0     630    2870

1104          KK   CD119
1105          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT BASELINE
1106          HC       2

1107          KK    R119
1108          KM       ROUTE FLOWS FROM BASELINE TO GUADALUPE IN ELLSWORTH CHANNEL
1109          RK    5280  0.0026   0.016           TRAP    15.0     1.5

1110          KK  SUB120
1111          KM       LOCAL RUNOFF TO U/S OF CAP OVERCHUTES
1112          BA    0.88
1113          LS             83
1114          UK     350   0.010   0.200     100
1115          RK    3400  0.0147   0.04    0.040   TRAP     2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1116          RK    3900  0.0005   0.035           TRAP     5.0     3.0

1117          KK    R120
1118          KM        ROUTE FLOWS FROM SUB120 TO MERIDIAN AND GUADALUPE
1119          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1120          KK  SUB122
1121          KM        LOCAL RUNOFF TO MERIDIAN AND GUADALUPE
1122          BA    0.71
1123          LS             83
1124          UK     750   0.008    0.20     100
1125          RK    3500  0.0086   0.040    0.05   TRAP     2.0     4.0
1126          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1127          KK   CO122
1128          KM        COMBINE FLOWS AT MERIDIAN AND GUADALUPE
1129          HC       2

1130          KK    R122
1131          KM        ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG GUADALUPE
1132          RK    5280   0.006   0.012           CIRC      60

1133          KK  SUB124
1134          KM        LOCAL RUNOFF TO GUADALUPE AND SIGNAL BUTTE
1135          BA     1.0
1136          LS             83
1137          UK     750   0.008   0.200     100
1138          RK    4100  0.0061   0.040     0.1   TRAP     2.0     4.0
1139          RK    5280   0.006   0.012           CIRC      60

1140          KK   CO124
1141          KM        COMBINE FLOW IN GUADALUPE AT SIGNAL BUTTE
1142          HC       2

1143          KK  RET114
1144          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D114S
1145          DR   D114S

1146          KK   RD114
1147          KM        ROUTE D114S FLOW TO GUADALUPE
1148          RK    5280   0.006   0.040           TRAP     2.0     4.0

1149          KK   CO125
1150          KM        COMBINE FLOW AT SIGNAL BUTTE IN GUADALUPE
1151          HC       2

1152          KK    D125
1153          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
1154          DT   D125S
1155          DI       0     206     570    3000
1156          DQ       0       0     364    2794
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1157          KK   R125
1158          KM       ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1159          RK   5280   0.006   0.012           CIRC     66

1160          KK  SUB126
1161          KM       LOCAL RUNOFF TO CRISMON AND GUADALUPE
1162          BA    1.0
1163          LS            83
1164          UK   1100   0.007   0.200    100
1165          RK   3000  0.0083   0.040   0.040   TRAP    2.0     4.0
1166          RK   5280   0.006   0.012           CIRC     66

1167          KK   CO126
1168          KM       COMBINE FLOWS IN GUADALUPE AT CRISMON
1169          HC      2

1170          KK  RET116
1171          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D116S
1172          DR   D116S

1173          KK   RO116
1174          KM       ROUTE D116S FLOWS TO GUADALUPE
1175          RK   5280   0.008   0.040           TRAP    2.0     4.0

1176          KK   CO127
1177          KM       COMBINE FLOWS IN CRISMON IN GUADALUPE
1178          HC      2

1179          KK   D127
1180          KM       DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN
1181          DT   D127S
1182          DI      0     252     780    3000
1183          DQ      0       0     528    2748

1184          KK   R127
1185          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG GUADALUPE
1186          RK   5280   0.005   0.012           CIRC     66

1187          KK  SUB128
1188          KM       LOCAL RUNOF TO ELLSWORTH AND GUADALUPE
1189          BA    1.0
1190          LS           74.7
1191          UK   1500   0.005   0.200    100
1192          RK   4500  0.0067   0.035   0.37    TRAP    2.0     3.0
1193          RK   5280   0.005   0.012           CIRC     66

1194          KK   CO128
1195          KM       COMBINE FLOWS IN GUADALUPE AT ELSWORTH
1196          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1197          KK  RET118
1198          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D118S
1199          DR   D118S

1200          KK   RD118
1201          KM       ROUTE D118S FLOWS TO GUADALUPE
1202          RK    5280  0.0067   0.035           TRAP     2.0     3.0

1203          KK   CO129
1204          KM       COMBINE FLOWS IN GUADALUPE AT ELLSWORTH
1205          HC       2

1206          KK    D129
1207          KM       DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
1208          DT   D129S
1209          DI       0     256     800    3000
1210          DQ       0       0     544    2744

1211          KK  COE129
1212          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT GUADALUPE
1213          HC       2

1214          KK   RE129
1215          KM       ROUTE FLOWS FROM GUADALUPE TO ELLIOT IN ELLSWORTH CHANNEL
1216          RK    5280  0.0022   0.016           TRAP    26.0     1.5

1217          KK  SUB130
1218          KM       LOCAL RUNOFF TO MERIDIAN
1219          BA     2.0
1220          LS             83
1221          UK    1500   0.009   0.200     100
1222          RK    4800   0.009   0.040    0.06   TRAP     2.0     4.0
1223          RK    5000  0.0045   0.035           TRAP    10.0     3.0

1224          KK    R130
1225          KM       ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG ELLIOT
1226          RK    5280   0.006   0.012           CIRC      54

1227          KK  SUB132
1228          KM       LOCAL RUNOFF TO SIGNAL BUTTE AND ELLIOT
1229          BA     1.2
1230          LS             83
1231          UK     750   0.008   0.200     100
1232          RK    4100   0.006   0.040    0.06   TRAP     2.0     4.0
1233          RK    5280   0.006   0.012           CIRC      54

1234          KK   CO132
1235          KM       COMBINE FLOW AT ELLIOT AND SIGNAL BUTTE
1236          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1237          KK  RET125
1238          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D125S
1239          DR   D125S

1240          KK    R125
1241          KM       ROUTE D125S FLOWS TO ELLIOT
1242          RK    5280  0.0038   0.035           TRAP     2.0     4.0

1243          KK   CO133
1244          KM       COMBINE FLOWS AT SIGNAL BUTTE AT ELLIOT
1245          HC       2

1246          KK    D133
1247          KM       DIVERT FLOWS IN EXCESS OF 54" STORM DRAIN CAPACITY
1248          DT   D133S
1249          DI       0     159     460    3000
1250          DQ       0       0     301    2841

1251          KK    R133
1252          KM       ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1253          RK    5280  0.0050   0.012           CIRC      66

1254          KK  SUB134
1255          KM       LOCAL RUNOFF TO ELLIOT AT CRISMON
1256          BA     1.0
1257          LS             83
1258          UK     750   0.008   0.200     100
1259          RK    4500   0.008   0.040    0.05   TRAP     2.0     4.0
1260          RK    5280  0.0050   0.012           CIRC      66

1261          KK   CO134
1262          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1263          HC       2

1264          KK  RET127
1265          KM       RETREIVE DIVERTED HYDROGRAPH FROM GUADALUPE
1266          DR   D127S

1267          KK   RD127
1268          KM       ROUTE DIVERTED FLOWS FROM D127S TO ELLIOT
1269          RK    5280   0.008   0.040           TRAP     2.0     4.0

1270          KK   CO135
1271          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1272          HC       2

1273          KK    D135
1274          KM       DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
1275          DT   D135S
1276          DI       0     224     720    3000
1277          DQ       0       0     496    2776
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1278          KK    R135
1279          KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
1280          RK    5280  0.0050   0.012           CIRC      72

1281          KK  SUB136
1282          KM        LOCAL RUNOFF TO ELLSWORTH AND ELLIOT
1283          BA     1.0
1284          LS             83
1285          UK     750   0.008   0.200     100
1286          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1287          RK    5280  0.0050   0.012           CIRC      72

1288          KK   CO136
1289          KM        COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1290          HC       2

1291          KK  RET129
1292          KM        RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1293          DR   D129S

1294          KK   RD129
1295          KM        ROUTE D129S FLOWS TO ELLIOT
1296          RK    5280   0.004   0.035           TRAP     2.0     4.0

1297          KK   CO137
1298          KM        COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1299          HC       2

1300          KK    D137
1301          KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
1302          DT   D137S
1303          DI       0     290     920    3000
1304          DQ       0       0     630    2710

1305          KK  COE137
1306          KM        COMBINE FLOWS IN ELLIOT AT ELLSWORTH
1307          HC       2

1308          KK  DIVELS
1309          KM        DIVERT FLOWS INTO ELLSWORTH REGIONAL BASIN
1310          KO       3
1311          DT  ELSBAS
1312          DI       0      42      84    3000
1313          DQ       0       0      42    2958

1314          KK    R138
1315          KM        ROUTE FLOWS FROM ELLSWORTH TO HAWES ALONG ELLIOT
1316          RK    5280  0.0025   0.016           TRAP    18.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1317          KK  SUB140
1318          KM        LOCAL RUNOFF TO HAWES AND ELLIOT
1319          BA     1.0
1320          LS              83
1321          UK     750   0.008   0.200     100
1322          RK    4500   0.008   0.040    0.05   TRAP     2.0     4.0
1323          RK    5280  0.0025   0.016           TRAP    18.0     1.5

1324          KK   CO140
1325          KM        COMBINE FLOWS AT HAWES AND ELLIOT
1326          HC       2

1327          KK  RET92S
1328          KM        RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1329          DR    D92S

1330          KK    RD92
1331          KM        ROUTE D92S FLOWS TO ELLIOT
1332          RK    5280   0.004   0.035           TRAP     2.0     4.0

1333          KK   CO141
1334          KM        COMBINE FLOWS AT HAWES AND ELLIOT
1335          HC       2

1336          KK    R141
1337          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN
1338          RK    5280  0.0023   0.016           TRAP    25.0     1.5

1339          KK  SUB142
1340          KM        LOCAL RUNOFF TO SOSSAMAN AND ELLIOT
1341          BA     1.0
1342          LS              82
1343          UK     750   0.008   0.200     100
1344          RK    4500   0.008   0.040    0.02   TRAP     2.0     4.0
1345          RK    5280  0.0025   0.016           TRAP    25.0     1.5

1346          KK   CO142
1347          KM        COMBINE FLOWS AT SOSSAMAN IN ELLIOT
1348          HC       2

1349          KK   RET94
1350          KM        RETRIEVE DIVERTED FLOWS D94S
1351          DR    D94S

1352          KK    RD94
1353          KM        ROUTE D94S FLOWS TO ELLIOT
1354          RK    5280   0.004   0.035           TRAP     2.0     4.0

1355          KK   CO143
1356          KM        COMBINE FLOWS AT POWER
1357          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1358          KK    R143
1359          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1360          RK    3700  0.0021   0.016           TRAP    35.0     1.5

1361          KK  SUB144
1362          KM        LOCAL RUNOFF TO R.W.C.D. AND ELLIOT
1363          BA    0.75
1364          LS              75
1365          UK    1250   0.006   0.200     100
1366          RK    5000  0.0036   0.040   0.050    TRAP     2.0     4.0
1367          RK    3700  0.0021   0.016           TRAP    35.0     1.5

1368          KK   CO144
1369          KM        COMBINE FLOWS AT R.W.C.D. IN ELLIOT
1370          HC       2

1371          KK  DIVELL
1372          KM        DIVERT FLOWS INTO REGIONAL BASIN AT ELLIOT AND R.W.C.D.
1373          KD       3
1374          DT  ELLBAS
1375          DI       0     280     400    3000
1376          DQ       0       0     120    2720

1377          KK   CO145
1378          KM        COMBINE FLOWS IN R.W.C.D. AT ELLIOT
1379          HC       2

1380          KK    R145
1381          KM        ROUTE R.W.C.D. FLOWS FROM ELLIOT TO WARNER
1382          RK    6030  0.0003   0.025           TRAP   150.0     3.0

1383          KK  RET133
1384          KM        RETRIEVE D133S FLOWS
1385          DR   D133S

1386          KK   RD133
1387          KM        ROUTE FLOWS TO CRISMON IN CHANNEL IN SO. ELLIOT ROW
1388          RK    5280  0.0043   0.035           TRAP    25.0     2.0

1389          KK  RET135
1390          KM        RETRIEVE D135S FLOWS
1391          DR   D135S

1392          KK   CO135
1393          KM        COMBINE FLOWS IN SO. ELLIOT ROW CHANNEL
1394          HC       2

1395          KK   RD135
1396          KM        ROUTE FLOWS TO ELLSWORTH IN SO ELLIOT ROW CHANNEL
1397          RK    5280  0.0043   0.035           TRAP    25.0     2.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1398          KK  RET137
1399          KM       RETRIEVE D1375 FLOWS
1400          DR   D1375

1401          KK  COD137
1402          KM       COMBINE FLOW IN ELLIOT SO ROW CHANNEL
1403          HC       2

1404          KK   DIVGM
1405          KM       DIVERT FLOWS INTO REGIONAL BASIN AT G.M. AND ELLIOT
1406          KO       3
1407          DT   GMBAS
1408          DI       0     250     500    3500
1409          DQ       0       0     250    3250

1410          KK   RO137
1411          KM       ROUTE FLOWS TO WARNER AND HAWES
1412          RK    7000  0.0046   0.035           TRAP    10.0     4.0

1413          KK  SUB147
1414          KM       LOCAL RUNOFF TO HAWES AND WARNER
1415          BA     1.0
1416          LS              82
1417          UK     750   0.008   0.200     100
1418          RK    4500   0.008   0.040    0.05   TRAP     2.0     4.0
1419          RK    5280   0.004   0.012          CIRC      60

1420          KK   CO147
1421          KM       COMBINE FLOWS AT HAWES IN WARNER
1422          HC       2

1423          KK  SUB148
1424          KM       LOCAL RUNOFF TO ELLSWORTH AND WARNER
1425          BA    2.66
1426          LS              83
1427          UK    1500   0.007   0.200     100
1428          RK    1500  0.0067   0.040    0.02   TRAP     2.0     4.0
1429          RK    8000  0.0053   0.035          TRAP     5.0     4.0

1430          KK    R148
1431          KM       ROUTE FLOWS FROM ELLSWORTH AND HAWES
1432          RK    5280   0.004   0.012          CIRC      60

1433          KK   CO148
1434          KM       COMBINE FLOWS AT HAWES AND WARNER
1435          HC       2

1436          KK    D148
1437          KM       DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
1438          DT   D1485
1439          DI       0     164     600    3000
1440          DQ       0       0     436    2836
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1441          KK    R149
1442          KM        ROUTE FLOWS FROM HANES TO SOSSAMAN
1443          RK    5280  0.0048   0.012           TRAP      60

1444          KK  SUB150
1445          KM        LOCAL RUNOFF TO SOSSAMAN
1446          BA     1.0
1447          LS             80
1448          UK     750   0.008   0.200     100
1449          RK    4500   0.007   0.040    0.05    TRAP     2.0     4.0
1450          RK    5280  0.0048   0.012           CIRC      60

1451          KK   CO150
1452          KM        COMBINE FLOWS AT SOSSAMAN IN WARNER
1453          HC       2

1454          KK    D150
1455          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
1456          DT   D150S
1457          DI       0     209     800    3000
1458          DQ       0       0     591    2791

1459          KK    R150
1460          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1461          RK    3700  0.0047   0.012           CIRC      66

1462          KK  SUB152
1463          KM        LOCAL RUNOFF TO R.W.C.D. AT WARNER
1464          BA    0.70
1465          LS             78
1466          UK     250   0.007   0.200     100
1467          RK    5000  0.0043   0.040    0.05    TRAP     2.0     4.0
1468          RK    3700  0.0047   0.016           CIRC      66

1469          KK   CO152
1470          KM        COMBINE FLOWS AT R.W.C.D. AT WARNER
1471          HC       2

1472          KK  DIVWAR
1473          KM        DIVERT FLOWS INTO REGIONAL BASIN AT WARNER
1474          KO       3
1475          DT  WARBAS
1476          DI       0     200     400    3000
1477          DQ       0       0     200    2800

1478          KK   CO153
1479          KM        COMBINE FLOWS IN R.W.C.D. AT WARNER
1480          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1481          KK    R153
1482          KM        ROUTE R.W.C.D. FLOWS TO SUB158
1483          RK    2200  0.0003   0.025           TRAP   170.0     3.0

1484          KK  SUB154
1485          KM        LOCAL RUNOFF TO HAWES
1486          BA    0.49
1487          LS              83
1488          UK    1100   0.006   0.200     100
1489          RK    2000   0.005   0.040    0.05    TRAP     2.0     4.0
1490          RK    5800  0.0043   0.035           TRAP    10.0     4.0

1491          KK  RET148
1492          KM        RETRIEVE DIVERTED FLOWS FROM D148S
1493          DR   D148S

1494          KK   RD148
1495          KM        ROUTE D148S FLOWS ALONG SOSSAMAN TO SO OF WARNER
1496          RK    2000   0.005   0.040           TRAP     2.0     4.0

1497          KK   CO154
1498          KM        COMBINE FLOWS AT HAWES
1499          HC       2

1500          KK    R154
1501          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN
1502          RK    5400  0.0043   0.035           TRAP    10.0     4.0

1503          KK  SUB156
1504          KM        LOCAL RUNOFF TO SOSSAMAN SO OF WARNER
1505          BA    0.73
1506          LS              83
1507          UK    1100   0.006   0.200     100
1508          RK    3000   0.005   0.040    0.05    TRAP     2.0     4.0
1509          RK    5400  0.0043   0.035           TRAP    10.0     4.0

1510          KK   CO156
1511          KM        COMBINE FLOW AT SOSSAMAN
1512          HC       2

1513          KK  RET150
1514          KM        RETRIEVE DIVERTED FLOWS D150S
1515          DR   D150S

1516          KK   RD150
1517          KM        ROUTE D150S FLOWS TO SO OF WARNER ALONG SOSSAMAN
1518          RK    3000   0.005   0.040           TRAP     2.0     4.0

1519          KK   CO157
1520          KM        COMBINE FLOWS AT SOSSAMAN
1521          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1522          KK   R157
1523          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1524          RK   3800  0.0043   0.035           TRAP   10.0     4.0

1525          KK  SUB158
1526          KM        LOCAL RUNOFF TO R.W.C.D. AT SO OF WARNER
1527          BA   0.70
1528          LS            78
1529          UK   1100   0.006   0.200     100
1530          RK   1500   0.005   0.040    0.05   TRAP    2.0     4.0
1531          RK   3800  0.0043   0.035           TRAP   10.0     4.0

1532          KK   CO158
1533          KM        COMBINE FLOWS IN CHANNEL SO OF WARNER AT R.W.C.D.
1534          HC       2

1535          KK  DIVARR
1536          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D. INTO BASIN ABOVE RAY ROAD
1537          KO       3
1538          DT  ARRBAS
1539          DI       0     450    2000    5000
1540          DQ       0       0    1550    4550

1541          KK   CO159
1542          KM        COMBINE FLOWS IN R.W.C.D. SO OF WARNER
1543          HC       2

1544          KK   R159
1545          KM        ROUTE R.W.C.D. FLOWS TO RAY ROAD
1546          RK   3600  0.0003   0.025           TRAP  170.0     3.0

1547          KK  SUB160
1548          KM        LOCAL RUNOFF TO R.W.C.D. AT RAY
1549          BA   1.55
1550          LS            83
1551          UK    250   0.004   0.200     100
1552          RK  14000  0.0045   0.040    0.20   TRAP    2.0     4.0
1553          RK   3600  0.0003   0.025           TRAP  170.0     3.0

1554          KK   CO160
1555          KM        COMBINE FLOWS IN R.W.C.D. AT RAY ROAD
1556          HC       2
1557          ZZ
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                                    ****
                FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****


                        SUPERSTITION FREEWAY  -  MULTI- FRREQUENCY ANALYSIS    (EMF5)
                        EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
                        MARCH 1987   -  100-YEAR RAINFALL AND 5-YEAR PIPE SYSTEM

  5 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          6  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT         HYDROGRAPH TIME DATA
                     NMIN         15  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        120  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2    0  ENDING DATE
                   NDTIME       0545  ENDING TIME

              COMPUTATION INTERVAL     .25 HOURS
                   TOTAL TIME BASE   29.75 HOURS

       ENGLISH UNITS

235 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                    ISTAD      RBAS1  DIVERSION HYDROGRAPH IDENTIFICATION

   DI            INFLOW        .00    195.00    300.00   3000.00

   DQ      DIVERTED FLOW       .00       .00    105.00   2805.00

                                                   ***

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

                    DIVERSION HYDROGRAPH    RBAS1

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
    2.      12.25        (CFS)      1.         0.         0.          0.
                       (INCHES)    .004       .004       .004        .004
                        (AC-FT)     0.         0.         0.          0.

                    CUMULATIVE AREA =    2.01 SQ MI

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                    HYDROGRAPH AT STATION     D22B
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
195.	12.25	(CFS)	157.	61.	49.	49.
		(INCHES)	.727	1.134	1.134	1.134
		(AC-FT)	78.	122.	122.	122.

CUMULATIVE AREA = 2.01 SQ MI

281 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	D28B	DIVERSION HYDROGRAPH IDENTIFICATION

DI	INFLOW	.00	276.00	680.00	3000.00
DQ	DIVERTED FLOW	.00	.00	404.00	2724.00

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DIVERSION HYDROGRAPH D28B

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
851.	12.75	(CFS)	195.	49.	39.	39.
		(INCHES)	.452	.452	.452	.452
		(AC-FT)	97.	97.	97.	97.

CUMULATIVE AREA = 4.01 SQ MI

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HYDROGRAPH AT STATION D28

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
276.	12.25	(CFS)	258.	110.	89.	89.
		(INCHES)	.598	1.019	1.019	1.019
		(AC-FT)	128.	218.	218.	218.

CUMULATIVE AREA = 4.01 SQ MI

449 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	DBAS2	DIVERSION HYDROGRAPH IDENTIFICATION

DI	INFLOW	.00	110.00	250.00	3000.00

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DQ      DIVERTED FLOW        .00       .00    140.00   2890.00

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

                    DIVERSION HYDROGRAPH    DBAS2

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   290.      12.25        (CFS)     180.        46.        37.         37.
                        (INCHES)    .557       .568       .568        .568
                         (AC-FT)     89.        91.        91.         91.

                     CUMULATIVE AREA =    3.00 SQ MI


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

                    HYDROGRAPH AT STATION     D43B

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   110.      12.00        (CFS)     110.        61.        49.         49.
                        (INCHES)    .341       .758       .758        .758
                         (AC-FT)     55.       121.       121.        121.

                     CUMULATIVE AREA =    3.00 SQ MI


477 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

DT              DIVERSION
                      ISTAD       D45B  DIVERSION HYDROGRAPH IDENTIFICATION

DI                 INFLOW        .00      1.00    500.00   3000.00

DQ      DIVERTED FLOW        .00       .00    499.00   2999.00

                                                              ***

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

                    DIVERSION HYDROGRAPH     D45B

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
  1218.      12.50        (CFS)     318.       118.        95.         95.
                        (INCHES)    .851      1.264      1.264       1.264
                         (AC-FT)    158.       235.       235.        235.

                     CUMULATIVE AREA =    3.48 SQ MI


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

                    HYDROGRAPH AT STATION      D45
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1.	10.00	(CFS)	1.	1.	1.	1.
		(INCHES)	.003	.009	.009	.009
		(AC-FT)	0.	2.	2.	2.

CUMULATIVE AREA = 3.48 SQ MI

658 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	SUPBAS	DIVERSION HYDROGRAPH IDENTIFICATION
DI INFLOW	.00	1500.00 3000.00
DQ DIVERTED FLOW	.00	.00 1500.00

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

DIVERSION HYDROGRAPH SUPBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1551.	12.50	(CFS)	165.	41.	33.	33.
		(INCHES)	1.022	1.022	1.022	1.022
		(AC-FT)	82.	82.	82.	82.

CUMULATIVE AREA = 1.50 SQ MI

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

HYDROGRAPH AT STATION DIVSUP

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1500.	12.25	(CFS)	526.	148.	119.	119.
		(INCHES)	3.258	3.670	3.670	3.670
		(AC-FT)	261.	294.	294.	294.

CUMULATIVE AREA = 1.50 SQ MI

902 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	GUABAS	DIVERSION HYDROGRAPH IDENTIFICATION
DI INFLOW	.00	630.00 1500.00 3000.00

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DQ      DIVERTED FLOW        .00       .00    870.00   2370.00

                                                          ***

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

                    DIVERSION HYDROGRAPH   GUABAS

PEAK FLOW    TIME                        MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     29.75-HR
   840.     13.00       (CFS)     136.        34.        27.         27.
                      (INCHES)    .243       .243       .243        .243
                       (AC-FT)     67.        67.        67.         67.

                    CUMULATIVE AREA =    5.20 SQ MI

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

                    HYDROGRAPH AT STATION   DIVGUA

PEAK FLOW    TIME                        MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     29.75-HR
   630.     12.50       (CFS)     448.       177.       143.        143.
                      (INCHES)    .801      1.268      1.268       1.268
                       (AC-FT)    222.       352.       352.        352.

                    CUMULATIVE AREA =    5.20 SQ MI


930 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

931 HC        HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

                    HYDROGRAPH AT STATION     CO98

PEAK FLOW    TIME                        MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     29.75-HR
  4861.     13.25       (CFS)    2501.       933.       753.        753.
                      (INCHES)    .862      1.286      1.286       1.286
                       (AC-FT)   1240.      1851.      1851.       1851.

                    CUMULATIVE AREA =   26.99 SQ MI


934 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

            HYDROGRAPH ROUTING DATA
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935 RK KINEMATIC WAVE STREAM ROUTING

L	5250.	CHANNEL LENGTH
S	.0003	SLOPE
N	.027	CHANNEL ROUGHNESS COEFFICIENT
CA	.00	CONTRIBUTING AREA
SHAPE	TRAP	CHANNEL SHAPE
WD	140.00	BOTTOM WIDTH OR DIAMETER
Z	3.00	SIDE SLOPE

***

KINEMATIC STREAM ROUTING USED FOR THIS REACH

COMPUTED KINEMATIC PARAMETERS

ALPHA	M	DT (MIN)	DX (FT)
.0433	1.616	7.50	2625.00

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HYDROGRAPH AT STATION R98

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
4826.	13.50	(CFS)	2472.	923.	744.	744.
		(INCHES)	.852	1.272	1.272	1.272
		(AC-FT)	1226.	1830.	1830.	1830.

CUMULATIVE AREA = 26.99 SQ MI

1049 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

	ISTAQ	ELBBAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DI	INFLOW	.00	250.00	500.00	3000.00
DQ	DIVERTED FLOW	.00	.00	250.00	2750.00

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DIVERSION HYDROGRAPH ELBBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
2216.	12.50	(CFS)	494.	123.	100.	100.
		(INCHES)	1.083	1.083	1.083	1.083
		(AC-FT)	245.	245.	245.	245.

CUMULATIVE AREA = 4.24 SQ MI

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

                    HYDROGRAPH AT STATION   DIVELB

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
   250.     12.00        (CFS)     246.       113.        91.        91.
                       (INCHES)    .540       .992       .992       .992
                        (AC-FT)    122.       224.       224.       224.

                     CUMULATIVE AREA =    4.24 SQ MI


1310 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                       ISTAD     ELSBAS  DIVERSION HYDROGRAPH IDENTIFICATION

   DI             INFLOW         .00     42.00     84.00   3000.00

   DQ      DIVERTED FLOW         .00       .00     42.00   2958.00

                                                              ***

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

                    DIVERSION HYDROGRAPH   ELSBAS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
   884.     13.00        (CFS)     863.       385.       310.       310.
                       (INCHES)    .504       .899       .899       .899
                        (AC-FT)    428.       763.       763.       763.

                     CUMULATIVE AREA =   15.93 SQ MI

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

                    HYDROGRAPH AT STATION   DIVELS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
    42.     12.00        (CFS)      42.        32.        26.        26.
                       (INCHES)    .025       .074       .074       .074
                        (AC-FT)    21.        63.        63.        63.

                     CUMULATIVE AREA =   15.93 SQ MI


1373 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                       ISTAD     ELLBAS  DIVERSION HYDROGRAPH IDENTIFICATION
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DI            INFLOW        .00    280.00    400.00   3000.00

DQ      DIVERTED FLOW       .00       .00    120.00   2720.00

                                                          ***

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

                    DIVERSION HYDROGRAPH   ELLBAS

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
   933.      13.25       (CFS)     354.       89.        71.         71.
                       (INCHES)    .176      .176       .176        .176
                        (AC-FT)    176.      176.       176.        176.

                    CUMULATIVE AREA =   18.68 SQ MI


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

                    HYDROGRAPH AT STATION   DIVELL

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
   280.      12.50       (CFS)     277.      127.       103.        103.
                       (INCHES)    .138      .254       .254        .254
                        (AC-FT)    137.      253.       253.        253.

                    CUMULATIVE AREA =   18.68 SQ MI


1406 KO         OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

DT          DIVERSION
                      ISTAD      GMBAS  DIVERSION HYDROGRAPH IDENTIFICATION

DI            INFLOW        .00    250.00    500.00   3500.00

DQ      DIVERTED FLOW       .00       .00    250.00   3250.00

                                                          ***

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

                    DIVERSION HYDROGRAPH    GMBAS

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
  3173.      13.00       (CFS)     863.      216.       174.        174.
                       (INCHES)    .000      .000       .000        .000
                        (AC-FT)    428.      428.       428.        428.

                    CUMULATIVE AREA =     .00 SQ MI
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***          ***          ***          ***          ***

                    HYDROGRAPH AT STATION    DIVGM

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   250.     12.50        (CFS)     209.       54.        44.        44.
                       (INCHES)    .000      .000       .000       .000
                        (AC-FT)    103.      107.       107.       107.

                    CUMULATIVE AREA =     .00 SQ MI


1474 KO        OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                     ISTAD     WARBAS  DIVERSION HYDROGRAPH IDENTIFICATION

   DI            INFLOW        .00    200.00    400.00   3000.00

   D2      DIVERTED FLOW       .00       .00    200.00   2800.00

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

                    DIVERSION HYDROGRAPH   WARBAS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   372.     12.50        (CFS)      95.       26.        21.        21.
                       (INCHES)    .165      .182       .182       .182
                        (AC-FT)    47.       52.        52.        52.

                    CUMULATIVE AREA =    5.36 SQ MI

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

                    HYDROGRAPH AT STATION   DIVWAR

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   200.     12.25        (CFS)     200.      113.        91.        91.
                       (INCHES)    .347      .782       .782       .782
                        (AC-FT)    99.       224.       224.       224.

                    CUMULATIVE AREA =    5.36 SQ MI


1537 KO        OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                     ISTAD     ARRBAS  DIVERSION HYDROGRAPH IDENTIFICATION
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DI	INFLOW	.00	450.00	2000.00	5000.00
DQ	DIVERTED FLOW	.00	.00	1550.00	4550.00

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

DIVERSION HYDROGRAPH ARRBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1437.	13.25	(CFS)	500.	125.	101.	101.
		(INCHES)	2.420	2.420	2.420	2.420
		(AC-FT)	248.	248.	248.	248.

CUMULATIVE AREA = 1.92 SQ MI

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HYDROGRAPH AT STATION DIVARR

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
450.	12.75	(CFS)	422.	135.	109.	109.
		(INCHES)	2.043	2.611	2.611	2.611
		(AC-FT)	209.	267.	267.	267.

CUMULATIVE AREA = 1.92 SQ MI

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	SUB02	425.	12.50	84.	26.	21.	.50		
DIVERSION TO	D2S	354.	12.00	39.	10.	8.	.50		
HYDROGRAPH AT	D2	71.	12.00	45.	16.	13.	.50		
ROUTED TO	R2	71.	12.50	44.	16.	13.	.50		
ROUTED TO	R3	61.	15.00	38.	15.	12.	.50		
HYDROGRAPH AT	SUB04	551.	12.50	166.	53.	43.	1.02		
DIVERSION TO	D4S	467.	12.25	92.	23.	19.	1.02		
HYDROGRAPH AT	D4	84.	12.25	74.	30.	24.	1.02		
ROUTED TO	R4	84.	12.50	74.	30.	24.	1.02		
HYDROGRAPH AT	SUB06	427.	12.50	85.	26.	21.	.50		
2 COMBINED AT	C06	511.	12.50	158.	56.	46.	1.52		
DIVERSION TO	D6S	374.	12.00	44.	11.	9.	1.52		
HYDROGRAPH AT	D6	137.	12.00	114.	45.	37.	1.52		
HYDROGRAPH AT	RETD2	354.	12.50	39.	10.	8.	.00		
ROUTED TO	RD2	344.	12.50	39.	10.	8.	.00		
2 COMBINED AT	C07	481.	12.50	153.	55.	44.	1.52		
ROUTED TO	R7	441.	12.50	153.	55.	45.	1.52		
HYDROGRAPH AT	SUB08	817.	12.50	156.	49.	39.	.95		
ROUTED TO	BAS08	345.	13.00	108.	36.	29.	.95	2.69	13.00
2 COMBINED AT	C08	729.	12.75	257.	91.	73.	2.47		
DIVERSION TO	D8S	591.	12.25	123.	31.	25.	2.47		
HYDROGRAPH AT	D8	138.	12.25	134.	60.	48.	2.47		
ROUTED TO	R8	138.	12.50	133.	60.	48.	2.47		
HYDROGRAPH AT	SUB10	316.	12.25	72.	23.	18.	.44		
2 COMBINED AT	C010	448.	12.25	203.	83.	67.	2.91		
2 COMBINED AT	C011	448.	12.25	232.	98.	79.	3.41		

ROUTED TO	R11	271.	13.25	216.	95.	77.	3.41		
HYDROGRAPH AT	SUB12	204.	13.00	87.	29.	24.	.61		
2 COMBINED AT	CO12	468.	13.00	297.	124.	100.	4.02		
HYDROGRAPH AT	SUB14	163.	12.50	42.	13.	11.	.25		
HYDROGRAPH AT	RETD6S	374.	12.50	44.	11.	9.	.00		
ROUTED TO	RD6	360.	12.50	45.	11.	9.	.00		
2 COMBINED AT	CO14	523.	12.50	87.	25.	20.	.25		
DIVERSION TO	D14S	246.	12.50	41.	12.	9.	.25		
HYDROGRAPH AT	D14	277.	12.50	46.	13.	11.	.25		
ROUTED TO	R14	238.	12.75	48.	14.	11.	.25		
HYDROGRAPH AT	SUB16	564.	12.25	95.	30.	24.	.50		
ROUTED TO	BAS16	3.	25.75	3.	2.	1.	.50	88.65	24.50
2 COMBINED AT	CO16	240.	12.75	50.	15.	12.	.75		
HYDROGRAPH AT	RETD8S	591.	12.75	123.	31.	25.	.00		
ROUTED TO	RD8	524.	12.75	124.	31.	25.	.00		
2 COMBINED AT	CO17	763.	12.75	174.	46.	37.	.75		
ROUTED TO	R17	710.	12.75	176.	47.	38.	.75		
HYDROGRAPH AT	SUB18	188.	12.50	45.	14.	12.	.28		
DIVERSION TO	D18S	158.	12.00	23.	6.	5.	.28		
HYDROGRAPH AT	D18	30.	12.00	23.	9.	7.	.28		
ROUTED TO	R18	30.	12.50	23.	9.	7.	.28		
HYDROGRAPH AT	SUB20	645.	12.50	153.	49.	39.	.98		
2 COMBINED AT	CO20	675.	12.50	175.	57.	46.	1.26		
DIVERSION TO	D20S	548.	12.25	75.	19.	15.	1.26		
HYDROGRAPH AT	D20	127.	12.25	100.	39.	31.	1.26		
ROUTED TO	R20	127.	12.50	100.	39.	31.	1.26		
HYDROGRAPH AT	SUB22	435.	12.50	116.	37.	30.	.75		
2 COMBINED AT	CO22	562.	12.50	216.	76.	61.	2.01		
DIVERSION TO	D22S	365.	12.25	58.	14.	12.	2.01		
HYDROGRAPH AT	D22	197.	12.25	158.	62.	50.	2.01		

DIVERSION TO	RBA51	2.	12.25	1.	0.	0.	2.01
HYDROGRAPH AT	D22B	195.	12.25	157.	61.	49.	2.01
ROUTED TO	R22	195.	12.50	157.	61.	49.	2.01
HYDROGRAPH AT	SUB24	690.	12.50	136.	42.	34.	.81
2 COMBINED AT	CO24	885.	12.50	292.	104.	84.	2.82
DIVERSION TO	D24S	706.	12.00	124.	31.	25.	2.82
HYDROGRAPH AT	D24	179.	12.00	168.	73.	59.	2.82
ROUTED TO	R24	179.	12.25	168.	73.	59.	2.82
HYDROGRAPH AT	SUB26	492.	12.75	193.	63.	51.	1.19
HYDROGRAPH AT	RETD4S	467.	12.50	92.	23.	19.	.00
ROUTED TO	RD4	456.	12.75	92.	23.	19.	.00
2 COMBINED AT	CO26	948.	12.75	284.	86.	69.	1.19
2 COMBINED AT	CO27	1127.	12.75	453.	159.	128.	4.01
DIVERSION TO	D28B	851.	12.25	195.	49.	39.	4.01
HYDROGRAPH AT	D28	276.	12.25	258.	110.	89.	4.01
HYDROGRAPH AT	RED14S	246.	12.50	41.	12.	9.	.00
ROUTED TO	RD14	223.	12.50	41.	12.	9.	.00
2 COMBINED AT	CO28	499.	12.50	299.	122.	98.	4.01
ROUTED TO	R28	487.	12.50	299.	122.	98.	4.01
HYDROGRAPH AT	SUB30	64.	12.25	10.	3.	3.	.05
2 COMBINED AT	CO30	529.	12.50	309.	125.	101.	4.07
DIVERSION TO	D30S	250.	12.25	45.	11.	9.	4.07
HYDROGRAPH AT	D30	279.	12.25	263.	113.	92.	4.07
ROUTED TO	RO30	279.	12.50	263.	113.	92.	4.07
HYDROGRAPH AT	SUB32	468.	12.25	85.	26.	21.	.45
2 COMBINED AT	CO32	740.	12.25	345.	140.	113.	4.51
2 COMBINED AT	CO33	1206.	12.75	521.	187.	151.	5.26
DIVERSION TO	D33S	882.	12.00	214.	53.	43.	5.26
HYDROGRAPH AT	D33	324.	12.00	308.	133.	107.	5.26
ROUTED TO	R33	324.	12.25	308.	133.	107.	5.26

2 COMBINED AT	CO34	792.	13.00	599.	257.	208.	9.28
ROUTED TO	R34	785.	13.50	602.	256.	206.	9.28
HYDROGRAPH AT	RED33S	882.	12.75	214.	53.	43.	.00
ROUTED TO	RD33S	870.	12.75	214.	54.	43.	.00
2 COMBINED AT	CO35	1440.	12.75	796.	309.	250.	9.28
ROUTED TO	R35	1425.	13.00	796.	310.	250.	9.28
HYDROGRAPH AT	SUB36	774.	12.50	166.	52.	42.	.94
HYDROGRAPH AT	RED18S	158.	12.50	23.	6.	5.	.00
ROUTED TO	RD18	150.	12.50	22.	6.	4.	.00
2 COMBINED AT	CO36	924.	12.50	189.	58.	47.	.94
DIVERSION TO	D36S	794.	12.00	98.	24.	20.	.94
HYDROGRAPH AT	D36	130.	12.00	91.	33.	27.	.94
ROUTED TO	R36	130.	12.25	91.	33.	27.	.94
HYDROGRAPH AT	SUB38	868.	12.25	163.	51.	41.	.84
2 COMBINED AT	CO38	998.	12.25	254.	84.	68.	1.78
DIVERSION TO	D38S	721.	12.00	76.	19.	15.	1.78
HYDROGRAPH AT	D38	277.	12.00	177.	65.	52.	1.78
ROUTED TO	R38	277.	12.25	177.	65.	52.	1.78
HYDROGRAPH AT	RED20S	548.	12.50	75.	19.	15.	.00
ROUTED TO	RD20	482.	12.50	75.	19.	15.	.00
HYDROGRAPH AT	SUB40	721.	12.50	136.	43.	35.	.77
2 COMBINED AT	CO40	1203.	12.50	211.	62.	50.	.77
2 COMBINED AT	CO41	1480.	12.50	388.	127.	102.	2.55
DIVERSION TO	D41S	1125.	12.25	139.	35.	28.	2.55
HYDROGRAPH AT	D41	355.	12.25	249.	92.	74.	2.55
ROUTED TO	R41	355.	12.50	249.	92.	74.	2.55
HYDROGRAPH AT	SUB42	370.	12.50	76.	24.	19.	.45
HYDROGRAPH AT	RED22S	365.	12.50	58.	14.	12.	.00
ROUTED TO	DR22	324.	12.75	58.	14.	12.	.00
2 COMBINED AT	CO42	653.	12.50	134.	38.	31.	.45

2 COMBINED AT	CO43	1008.	12.50	383.	130.	105.	3.00		
DIVERSION TO	D43S	608.	12.25	94.	23.	19.	3.00		
HYDROGRAPH AT	DIV43S	400.	12.25	289.	107.	86.	3.00		
DIVERSION TO	DBAS2	290.	12.00	180.	46.	37.	3.00		
HYDROGRAPH AT	D43B	110.	12.00	110.	61.	49.	3.00		
ROUTED TO	R43	110.	12.25	110.	61.	49.	3.00		
HYDROGRAPH AT	SUB44	433.	12.50	86.	27.	22.	.48		
HYDROGRAPH AT	RED24S	706.	12.50	124.	31.	25.	.00		
ROUTED TO	RD24	675.	12.50	125.	31.	25.	.00		
2 COMBINED AT	CO44	1109.	12.50	211.	58.	47.	.48		
2 COMBINED AT	CO45	1219.	12.50	319.	119.	96.	3.48		
DIVERSION TO	D45B	1218.	10.00	318.	118.	95.	3.48		
HYDROGRAPH AT	D45	1.	10.00	1.	1.	1.	3.48		
ROUTED TO	R45	1.	10.75	1.	1.	1.	3.48		
HYDROGRAPH AT	SUB48	551.	12.25	99.	30.	25.	.52		
2 COMBINED AT	CO49	552.	12.25	100.	31.	25.	4.00		
ROUTED TO	R49	475.	12.25	101.	31.	25.	4.00		
HYDROGRAPH AT	SUB50	1110.	12.25	187.	58.	47.	1.00		
HYDROGRAPH AT	RED30S	250.	12.50	45.	11.	9.	.00		
ROUTED TO	RD30	226.	12.75	45.	11.	9.	.00		
2 COMBINED AT	CO50	1130.	12.25	232.	69.	56.	1.00		
2 COMBINED AT	CO51	1605.	12.25	332.	100.	81.	5.00		
2 COMBINED AT	CO52	2333.	12.50	1097.	410.	331.	14.28		
ROUTED TO	R52	2163.	12.75	1071.	405.	327.	14.28		
HYDROGRAPH AT	SUB54	566.	13.00	237.	80.	65.	1.56		
ROUTED TO	RET30	258.	14.50	133.	49.	40.	1.56	3.07	14.50
2 COMBINED AT	CO62	2163.	12.75	1184.	454.	366.	15.84		
HYDROGRAPH AT	SUB56	1035.	12.50	216.	68.	55.	1.19		
HYDROGRAPH AT	RET38S	721.	12.25	76.	19.	15.	.00		
ROUTED TO	RO3B	536.	12.75	76.	19.	15.	.00		

2 COMBINED AT	CD56	1465.	12.50	292.	87.	70.	1.19
DIVERSION TO	D56S	1285.	12.00	167.	42.	34.	1.19
HYDROGRAPH AT	D56	180.	12.00	125.	45.	37.	1.19
HYDROGRAPH AT	RET41S	1125.	12.50	139.	35.	28.	.00
ROUTED TO	RD41	991.	12.50	141.	35.	28.	.00
2 COMBINED AT	CD57	1171.	12.50	266.	81.	65.	1.19
DIVERSION TO	D57S	991.	12.00	139.	35.	28.	1.19
HYDROGRAPH AT	D57	180.	12.00	127.	46.	37.	1.19
ROUTED TO	R57	180.	12.25	127.	46.	37.	1.19
HYDROGRAPH AT	RET43S	608.	12.50	94.	23.	19.	.00
ROUTED TO	RD43	353.	13.25	92.	23.	19.	.00
HYDROGRAPH AT	SUB58	155.	13.00	62.	21.	17.	.38
2 COMBINED AT	CD58	508.	13.00	154.	44.	35.	.38
2 COMBINED AT	CD59	688.	13.00	280.	90.	73.	1.57
DIVERSION TO	D59S	494.	12.25	120.	30.	24.	1.57
HYDROGRAPH AT	D59	194.	12.25	161.	60.	49.	1.57
ROUTED TO	R59	194.	12.50	160.	60.	48.	1.57
2 COMBINED AT	CD64	2357.	12.75	1340.	514.	415.	17.41
ROUTED TO	R64	2324.	13.00	1331.	510.	412.	17.41
HYDROGRAPH AT	SUB66	204.	12.50	52.	16.	13.	.31
HYDROGRAPH AT	RET56S	1285.	12.50	167.	42.	34.	.00
ROUTED TO	RD56	1179.	12.50	169.	42.	34.	.00
2 COMBINED AT	CD66	1383.	12.50	221.	59.	47.	.31
HYDROGRAPH AT	RET57S	991.	12.50	139.	35.	28.	.00
ROUTED TO	RD57	961.	12.75	141.	35.	28.	.00
2 COMBINED AT	CD67	2217.	12.50	361.	94.	76.	.31
ROUTED TO	R67	2130.	12.75	364.	95.	76.	.31
HYDROGRAPH AT	SUB68	934.	12.50	206.	65.	52.	1.19
HYDROGRAPH AT	RET59S	494.	13.00	120.	30.	24.	.00
ROUTED TO	RD59	481.	13.25	120.	30.	24.	.00

2 COMBINED AT	CO68	1052.	12.50	326.	95.	76.	1.19
2 COMBINED AT	CO69	3051.	12.50	691.	189.	153.	1.50
DIVERSION TO	SUPBAS	1551.	12.25	165.	41.	33.	1.50
HYDROGRAPH AT	DIVSUP	1500.	12.25	526.	148.	119.	1.50
ROUTED TO	R69	1500.	12.50	532.	150.	121.	1.50
HYDROGRAPH AT	SUB70	120.	12.75	48.	16.	13.	.42
2 COMBINED AT	CO70	1620.	12.75	579.	166.	134.	1.92
2 COMBINED AT	CO71	3942.	13.00	1869.	676.	545.	19.33
ROUTED TO	R71	3850.	13.00	1869.	675.	545.	19.33
HYDROGRAPH AT	SUB72	188.	13.00	81.	27.	22.	.61
DIVERSION TO	D72S	164.	12.25	58.	15.	12.	.61
HYDROGRAPH AT	D72	24.	12.25	24.	13.	10.	.61
ROUTED TO	R72	24.	12.50	24.	13.	10.	.61
HYDROGRAPH AT	SUB74	101.	13.25	51.	18.	14.	.51
2 COMBINED AT	CO74	125.	13.25	75.	31.	25.	1.12
2 COMBINED AT	CO75	3971.	13.00	1944.	706.	569.	20.45
ROUTED TO	R75	3918.	13.25	1897.	696.	561.	20.45
HYDROGRAPH AT	SUB76	62.	13.25	31.	11.	9.	.29
2 COMBINED AT	CO76	3980.	13.25	1925.	706.	570.	20.75
HYDROGRAPH AT	SUB78	71.	12.50	22.	7.	6.	.14
DIVERSION TO	D78S	60.	12.00	12.	3.	3.	.14
HYDROGRAPH AT	D78	11.	12.00	10.	4.	3.	.14
ROUTED TO	R78	11.	12.25	10.	4.	3.	.14
HYDROGRAPH AT	SUB80	195.	14.00	117.	43.	35.	.86
HYDROGRAPH AT	RET36S	794.	12.50	98.	24.	20.	.00
ROUTED TO	RD36	698.	12.50	102.	26.	21.	.00
2 COMBINED AT	CO80	726.	12.50	215.	68.	55.	.86
2 COMBINED AT	CO81	737.	12.50	225.	72.	58.	1.00
DIVERSION TO	D81S	699.	12.25	187.	49.	40.	1.00
HYDROGRAPH AT	D81	38.	12.25	38.	23.	19.	1.00

ROUTED TO	R81	38.	12.50	38.	23.	19.	1.00		
HYDROGRAPH AT	SUB82	473.	12.25	79.	24.	20.	.43		
2 COMBINED AT	CO82	503.	12.25	115.	48.	39.	1.43		
ROUTED TO	R82	416.	12.50	116.	48.	39.	1.43		
HYDROGRAPH AT	SUB84	250.	12.50	64.	20.	16.	.35		
HYDROGRAPH AT	RET78S	60.	12.50	12.	3.	3.	.00		
ROUTED TO	DR78	59.	12.75	12.	3.	3.	.00		
2 COMBINED AT	CO84	301.	12.50	77.	23.	19.	.35		
HYDROGRAPH AT	RET81S	699.	12.50	187.	49.	40.	.00		
ROUTED TO	RD81	650.	12.75	187.	49.	40.	.00		
2 COMBINED AT	CO83	924.	12.50	263.	73.	59.	.35		
ROUTED TO	R85	912.	12.75	260.	72.	58.	.35		
HYDROGRAPH AT	SUB86	463.	12.25	88.	27.	22.	.46		
ROUTED TO	RET86	139.	13.00	54.	18.	15.	.46	3.37	13.00
2 COMBINED AT	CO86	1023.	12.75	313.	91.	73.	.81		
2 COMBINED AT	CO87	1290.	12.75	427.	139.	112.	2.24		
ROUTED TO	R87	1220.	12.75	430.	139.	112.	2.24		
HYDROGRAPH AT	SUB88	105.	13.25	55.	19.	15.	.53		
DIVERSION TO	D88S	95.	12.25	45.	13.	10.	.53		
HYDROGRAPH AT	D88	10.	12.25	10.	6.	5.	.53		
ROUTED TO	R88	10.	12.50	10.	6.	5.	.53		
HYDROGRAPH AT	SUB90	215.	12.75	84.	27.	22.	.47		
2 COMBINED AT	CO90	225.	12.75	94.	34.	27.	1.00		
2 COMBINED AT	CO91	1444.	12.75	524.	173.	140.	3.24		
ROUTED TO	R91	1409.	13.00	524.	174.	140.	3.24		
HYDROGRAPH AT	SUB92	193.	14.00	124.	45.	37.	1.00		
HYDROGRAPH AT	RET88S	95.	13.25	45.	13.	10.	.00		
ROUTED TO	RD88	93.	13.50	44.	13.	10.	.00		
2 COMBINED AT	CO92	279.	13.75	168.	58.	47.	1.00		
DIVERSION TO	D92S	249.	12.25	138.	39.	31.	1.00		

HYDROGRAPH AT	D92	30.	12.25	30.	19.	16.	1.00
ROUTED TO	R92	30.	12.50	30.	19.	16.	1.00
HYDROGRAPH AT	SUB94	255.	13.25	123.	42.	34.	.96
2 COMBINED AT	CD94	285.	13.25	152.	61.	50.	1.96
DIVERSION TO	D94S	224.	12.25	91.	24.	19.	1.96
HYDROGRAPH AT	D94	61.	12.25	61.	38.	30.	1.96
2 COMBINED AT	CD95	1470.	13.00	584.	211.	170.	5.20
DIVERSION TO	SUABAS	840.	12.50	136.	34.	27.	5.20
HYDROGRAPH AT	DIVGUA	630.	12.50	448.	177.	143.	5.20
ROUTED TO	R95	630.	12.75	446.	177.	143.	5.20
HYDROGRAPH AT	SUB96	128.	14.50	91.	35.	28.	1.04
2 COMBINED AT	CD96	753.	14.00	535.	212.	171.	6.24
HYDROGRAPH AT	RET72	164.	13.00	58.	15.	12.	.00
ROUTED TO	DR72	156.	13.25	57.	15.	12.	.00
2 COMBINED AT	CD97	889.	13.50	592.	227.	183.	6.24
2 COMBINED AT	CD98	4861.	13.25	2501.	933.	753.	26.99
ROUTED TO	R98	4826.	13.50	2472.	923.	744.	26.99
HYDROGRAPH AT	SUB100	896.	12.25	160.	49.	40.	.82
HYDROGRAPH AT	SUB102	216.	12.25	36.	11.	9.	.18
2 COMBINED AT	CD102	1112.	12.25	196.	61.	49.	1.00
ROUTED TO	R102	987.	12.50	198.	61.	49.	1.00
HYDROGRAPH AT	SUB104	551.	12.25	106.	33.	26.	.55
2 COMBINED AT	CD104	1495.	12.50	304.	94.	76.	1.55
HYDROGRAPH AT	SUB106	394.	12.75	155.	51.	41.	1.00
DIVERSION TO	D106S	330.	12.25	93.	23.	19.	1.00
HYDROGRAPH AT	D106	64.	12.25	62.	28.	22.	1.00
ROUTED TO	R106	64.	12.50	62.	28.	22.	1.00
HYDROGRAPH AT	SUB108	477.	12.25	84.	26.	21.	.45
2 COMBINED AT	CD108	538.	12.25	145.	54.	43.	1.45
DIVERSION TO	D108S	416.	12.00	43.	11.	9.	1.45

HYDROGRAPH AT	D108	122.	12.00	101.	43.	34.	1.45
2 COMBINED AT	CD109	1617.	12.50	405.	136.	110.	3.00
ROUTED TO	R109	1592.	12.50	406.	137.	110.	3.00
HYDROGRAPH AT	SUB110	308.	13.00	129.	42.	34.	.77
HYDROGRAPH AT	RET106	330.	12.75	93.	23.	19.	.00
ROUTED TO	RD106	324.	12.75	93.	23.	19.	.00
2 COMBINED AT	CD110	618.	12.75	222.	65.	53.	.77
ROUTED TO	R110	615.	13.00	219.	65.	52.	.77
HYDROGRAPH AT	RET108	416.	12.25	43.	11.	9.	.00
ROUTED TO	RD106	348.	12.50	44.	11.	9.	.00
2 COMBINED AT	CD111	759.	12.75	263.	76.	61.	.77
HYDROGRAPH AT	SUB112	164.	13.00	72.	24.	19.	.47
2 COMBINED AT	CD112	914.	12.75	334.	100.	80.	1.24
2 COMBINED AT	CD113	2466.	12.50	739.	237.	191.	4.24
DIVERSION TO	ELBBAS	2216.	12.00	494.	123.	100.	4.24
HYDROGRAPH AT	DIVELB	250.	12.00	246.	113.	91.	4.24
ROUTED TO	R113	250.	12.25	246.	113.	91.	4.24
HYDROGRAPH AT	SUB114	266.	13.00	109.	36.	29.	.70
DIVERSION TO	D114S	225.	12.25	68.	17.	14.	.70
HYDROGRAPH AT	D114	41.	12.25	40.	19.	15.	.70
ROUTED TO	R114	41.	12.50	40.	19.	15.	.70
HYDROGRAPH AT	SUB116	318.	12.50	92.	30.	24.	.58
2 COMBINED AT	CD116	359.	12.50	132.	48.	39.	1.28
DIVERSION TO	D116S	271.	12.00	50.	13.	10.	1.28
HYDROGRAPH AT	D116	88.	12.00	82.	36.	29.	1.28
ROUTED TO	R116	88.	13.50	81.	35.	28.	1.28
HYDROGRAPH AT	SUB118	342.	12.50	95.	30.	25.	.62
2 COMBINED AT	CD118	407.	12.50	172.	66.	53.	1.90
DIVERSION TO	D118S	277.	12.25	52.	13.	10.	1.90
HYDROGRAPH AT	D118	130.	12.25	121.	53.	42.	1.90

2 COMBINED AT	CO119	380.	12.25	367.	165.	133.	6.14
ROUTED TO	R119	380.	12.75	366.	165.	133.	6.14
HYDROGRAPH AT	SUB120	646.	12.50	142.	45.	36.	.88
ROUTED TO	R120	594.	12.75	143.	45.	36.	.88
HYDROGRAPH AT	SUB122	316.	12.75	112.	36.	29.	.71
2 COMBINED AT	CO122	910.	12.75	255.	81.	65.	1.59
ROUTED TO	R122	897.	12.75	255.	81.	66.	1.59
HYDROGRAPH AT	SUB124	449.	12.75	157.	51.	41.	1.00
2 COMBINED AT	CO124	1346.	12.75	412.	132.	106.	2.59
HYDROGRAPH AT	RET114	225.	13.00	68.	17.	14.	.00
ROUTED TO	RD114	217.	13.00	68.	17.	14.	.00
2 COMBINED AT	CO125	1527.	12.75	480.	149.	120.	2.59
DIVERSION TO	D125S	1321.	12.25	292.	73.	59.	2.59
HYDROGRAPH AT	D125	206.	12.25	187.	76.	61.	2.59
ROUTED TO	R125	206.	12.50	187.	76.	61.	2.59
HYDROGRAPH AT	SUB126	336.	13.00	152.	51.	41.	1.00
2 COMBINED AT	CO126	542.	13.00	339.	127.	102.	3.59
HYDROGRAPH AT	RET116	271.	12.50	50.	13.	10.	.00
ROUTED TO	RD116	246.	12.75	50.	13.	10.	.00
2 COMBINED AT	CO127	769.	12.75	389.	139.	112.	3.59
DIVERSION TO	D127S	517.	12.25	150.	38.	30.	3.59
HYDROGRAPH AT	D127	252.	12.25	239.	102.	82.	3.59
ROUTED TO	R127	252.	12.50	239.	102.	82.	3.59
HYDROGRAPH AT	SUB128	131.	14.25	91.	35.	28.	1.00
2 COMBINED AT	CO128	383.	14.25	330.	136.	110.	4.59
HYDROGRAPH AT	RET118	277.	12.50	52.	13.	10.	.00
ROUTED TO	RD118	253.	12.75	51.	13.	10.	.00
2 COMBINED AT	CO129	594.	12.75	381.	149.	120.	4.59
DIVERSION TO	D129S	338.	12.25	127.	32.	26.	4.59
HYDROGRAPH AT	D129	256.	12.25	254.	117.	94.	4.59

2 COMBINED AT	COE129	636.	12.75	620.	282.	228.	10.73
ROUTED TO	RE129	636.	13.00	618.	281.	227.	10.73
HYDROGRAPH AT	SUB130	599.	13.25	295.	100.	80.	2.00
ROUTED TO	R130	593.	13.25	295.	100.	80.	2.00
HYDROGRAPH AT	SUB132	538.	12.75	187.	61.	49.	1.20
2 COMBINED AT	CO132	1034.	13.00	480.	160.	129.	3.20
HYDROGRAPH AT	RET125	1321.	12.75	292.	73.	59.	.00
ROUTED TO	R125	1207.	13.00	292.	73.	59.	.00
2 COMBINED AT	CO133	2241.	13.00	771.	233.	188.	3.20
DIVERSION TO	D133S	2082.	12.25	614.	154.	124.	3.20
HYDROGRAPH AT	D133	159.	12.25	159.	80.	64.	3.20
ROUTED TO	R133	159.	12.50	159.	80.	64.	3.20
HYDROGRAPH AT	SUB134	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CO134	607.	12.75	311.	130.	105.	4.20
HYDROGRAPH AT	RET127	517.	12.75	150.	38.	30.	.00
ROUTED TO	RD127	499.	13.00	150.	38.	30.	.00
2 COMBINED AT	CO135	1067.	12.75	461.	168.	135.	4.20
DIVERSION TO	D135S	843.	12.25	242.	60.	49.	4.20
HYDROGRAPH AT	D135	224.	12.25	222.	107.	86.	4.20
ROUTED TO	R135	224.	12.50	221.	107.	86.	4.20
HYDROGRAPH AT	SUB136	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CO136	672.	12.75	373.	158.	127.	5.20
HYDROGRAPH AT	RET129	338.	12.75	127.	32.	26.	.00
ROUTED TO	RD129	315.	13.00	127.	32.	26.	.00
2 COMBINED AT	CO137	940.	13.00	500.	189.	153.	5.20
DIVERSION TO	D137S	650.	12.25	215.	54.	43.	5.20
HYDROGRAPH AT	D137	290.	12.25	288.	136.	110.	5.20
2 COMBINED AT	COE137	926.	13.00	905.	417.	336.	15.93
DIVERSION TO	ELSBAS	884.	12.00	863.	385.	310.	15.93
HYDROGRAPH AT	DIVELS	42.	12.00	42.	32.	26.	15.93

ROUTED TO	R138	42.	13.25	42.	31.	25.	15.93
HYDROGRAPH AT	SUB140	445.	12.75	155.	50.	41.	1.00
2 COMBINED AT	CO140	487.	12.75	197.	82.	66.	16.93
HYDROGRAPH AT	RET925	249.	13.75	138.	39.	31.	.00
ROUTED TO	RD92	247.	14.00	137.	39.	31.	.00
2 COMBINED AT	CO141	582.	13.00	329.	120.	97.	16.93
ROUTED TO	R141	571.	13.25	328.	119.	96.	16.93
HYDROGRAPH AT	SUB142	390.	13.00	144.	48.	38.	1.00
2 COMBINED AT	CO142	959.	13.00	472.	167.	135.	17.93
HYDROGRAPH AT	RET94	224.	13.25	91.	24.	19.	.00
ROUTED TO	RD94	221.	13.25	90.	24.	19.	.00
2 COMBINED AT	CO143	1151.	13.00	562.	191.	154.	17.93
ROUTED TO	R143	1125.	13.25	561.	190.	154.	17.93
HYDROGRAPH AT	SUB144	113.	14.00	69.	26.	21.	.75
2 COMBINED AT	CO144	1213.	13.25	629.	216.	174.	18.68
DIVERSION TO	ELLBAS	933.	12.50	354.	89.	71.	18.68
HYDROGRAPH AT	DIVELL	280.	12.50	277.	127.	103.	18.68
2 COMBINED AT	CO145	5106.	13.50	2747.	1030.	847.	45.67
ROUTED TO	R145	5085.	13.75	2702.	1034.	834.	45.67
HYDROGRAPH AT	RET133	2082.	13.00	614.	154.	124.	.00
ROUTED TO	RD133	2064.	13.00	612.	154.	124.	.00
HYDROGRAPH AT	RET135	843.	12.75	242.	60.	49.	.00
2 COMBINED AT	CO135	2900.	13.00	853.	214.	173.	.00
ROUTED TO	RD135	2773.	13.00	858.	216.	174.	.00
HYDROGRAPH AT	RET137	650.	13.00	215.	54.	43.	.00
2 COMBINED AT	COD137	3423.	13.00	1072.	270.	218.	.00
DIVERSION TO	GMBAS	3173.	12.50	863.	216.	174.	.00
HYDROGRAPH AT	DIVGM	250.	12.50	209.	54.	44.	.00
ROUTED TO	RD137	250.	14.00	206.	54.	44.	.00
HYDROGRAPH AT	SUB147	416.	12.75	149.	48.	39.	1.00

2 COMBINED AT	CO147	627.	13.00	351.	103.	83.	1.00
HYDROGRAPH AT	SUB148	716.	13.25	389.	133.	108.	2.66
ROUTED TO	R148	715.	13.50	389.	133.	108.	2.66
2 COMBINED AT	CO148	1287.	13.00	740.	236.	190.	3.66
DIVERSION TO	D148S	1123.	12.25	576.	148.	119.	3.66
HYDROGRAPH AT	D148	164.	12.25	164.	88.	71.	3.66
ROUTED TO	R149	164.	13.00	164.	88.	71.	3.66
HYDROGRAPH AT	SUB150	351.	12.75	134.	44.	36.	1.00
2 COMBINED AT	CO150	515.	12.75	295.	132.	107.	4.66
DIVERSION TO	D150S	306.	12.25	87.	22.	17.	4.66
HYDROGRAPH AT	D150	209.	12.25	209.	110.	89.	4.66
ROUTED TO	R150	209.	12.50	209.	110.	89.	4.66
HYDROGRAPH AT	SUB152	363.	12.50	89.	29.	23.	.70
2 COMBINED AT	CO152	572.	12.50	294.	139.	112.	5.36
DIVERSION TO	WARBAS	372.	12.25	95.	26.	21.	5.36
HYDROGRAPH AT	DIVWAR	200.	12.25	200.	113.	91.	5.36
2 COMBINED AT	CO153	5285.	13.75	2902.	1147.	925.	51.03
ROUTED TO	R153	5141.	14.00	2886.	1139.	919.	51.03
HYDROGRAPH AT	SUB154	152.	13.00	73.	25.	20.	.49
HYDROGRAPH AT	RET148	1123.	13.00	576.	148.	119.	.00
ROUTED TO	RD148	1109.	13.25	576.	148.	119.	.00
2 COMBINED AT	CO154	1261.	13.25	649.	172.	139.	.49
ROUTED TO	R154	1258.	13.25	644.	172.	139.	.49
HYDROGRAPH AT	SUB156	226.	13.25	109.	36.	29.	.73
2 COMBINED AT	CO156	1484.	13.25	753.	208.	168.	1.22
HYDROGRAPH AT	RET150	306.	12.75	87.	22.	17.	.00
ROUTED TO	RD150	299.	13.00	86.	22.	17.	.00
2 COMBINED AT	CO157	1745.	13.25	840.	230.	186.	1.22
ROUTED TO	R157	1733.	13.25	840.	231.	186.	1.22
HYDROGRAPH AT	SUB158	155.	13.25	83.	29.	23.	.70

2 COMBINED AT	CO158	1887.	13.25	922.	260.	210.	1.92
DIVERSION TO	ARRBAS	1437.	12.75	500.	125.	101.	1.92
HYDROGRAPH AT	DIVARR	450.	12.75	422.	135.	109.	1.92
2 COMBINED AT	CO159	5591.	14.00	3272.	1273.	1027.	52.94
ROUTED TO	R159	5576.	14.00	3256.	1264.	1020.	52.94
HYDROGRAPH AT	SUB160	599.	13.00	225.	75.	61.	1.55
2 COMBINED AT	CO160	5901.	14.00	3427.	1339.	1080.	54.49

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

Appendix L

HEC-1 Input and Output - 10 year

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

  1           ID       SUPERSTITION FREEWAY  -  MULTI- FRREQUENCY ANALYSIS    (EMF10)
  2           ID       EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
  3           ID       MARCH 1987   -  100-YEAR RAINFALL AND 10-YEAR PIPE SYSTEM
  4           IT      15                    120
  5           ID       6
  6           PG       1    3.65
  7           PG      10
  8           IN      30                     48
  9           PI   0.019   0.020   0.020   0.022   0.022   0.023   0.025   0.025   0.026   0.028
 10           PI   0.029   0.031   0.033   0.035   0.038   0.042   0.046   0.051   0.057   0.067
 11           PI   0.085   0.113   0.176   1.387   0.262   0.136   0.097   0.076   0.067   0.058
 12           PI   0.050   0.046   0.041   0.038   0.035   0.033   0.031   0.029   0.027   0.027
 13           PI   0.025   0.024   0.023   0.022   0.022   0.020   0.020   0.019

 14           KK   SUB02
 15           KM       LOCAL RUNOFF AT MC KELLIPS AND RECKER ROADS
 16           PR      10
 17           PW       1
 18           PT       1
 19           PW       1
 20           BA    0.50
 21           LS           83.5
 22           UK     110  0.0050    0.20     100
 23           RK    6000   0.015   0.035   0.084    TRAP    40.0    0.01
 24           RK    7700  0.0085   0.012           CIRC      48

 25           KK      D2
 26           KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
 27           DT     D25
 28           DI       0     144     300    3000
 29           DQ       0       0     156    2856

 30           KK      R2
 31           KM       ROUTE FLOWS FROM MC KELLIPS AND RECKER TO R.W.C.D. AT MC KELLIPS
 32           RK   10300  0.0110   0.012           CIRC      48

 33           KK      R3
 34           KM       ROUTE FLOWS FROM MC KELLIPS TO BROWN ALONG R.W.C.D.
 35           RK    6000  0.0001   0.030           TRAP      80     3.0

 36           KK   SUB04
 37           KM       LOCAL RUNOFF TO 0.5 MI. WEST OF BUSH HWY.
 38           PR      10
 39           PW       1
 40           PT       1
 41           PW       1
 42           BA    1.02
 43           LS           83.6
 44           UK     800   0.014   0.200     100
 45           RK    7000   0.014   0.035    0.17    TRAP    15.0     1.5
 46           RK    2640  0.0092   0.012           CIRC      48
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK      D4
  48          KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN PIPE CAPACITY
  49          DT     D4S
  50          DI       0     150     300    3000
  51          DQ       0       0     150    2850

  52          KK      R4
  53          KM        ROUTE FLOWS FROM 0.5 MI. WEST OF POWER TO RECKER ROAD
  54          RK    2640  0.0080   0.012           CIRC      60

  55          KK   SUB06
  56          KM        LOCAL RUNOFF TO BROWN AND RECKER ROADS
  57          BA     0.5
  58          LS              84
  59          UK     200   0.005   0.200     100
  60          RK    2640   0.009   0.016   0.025    TRAP    40.0    0.01
  61          RK    5280   0.005   0.016           TRAP    60.0    0.01

  62          KK     C06
  63          KM        COMBINE FLOWS AT BROWN AND RECKER ROADS
  64          HC       2

  65          KK      D6
  66          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN PIPE CAPACITY
  67          DT     D6S
  68          DI       0     255     300    3000
  69          DQ       0       0      45    2745

  70          KK   RETD2
  71          KM        RETRIEVE FLOWS FROM D2
  72          DR     D2S

  73          KK     RD2
  74          KM        ROUTE D2S FLOW TO BROWN AND RECKER ROADS
  75          RK    5280   0.005   0.016           TRAP    40.0     0.01

  76          KK     C07
  77          KM        COMBINE FLOWS AT BROWN AND RECKER
  78          HC       2

  79          KK      R7
  80          KM        ROUTE FLOWS FROM RECKER TO HIGLEY ALONG BROWN
  81          RK    5280  0.0087   0.012           CIRC      60

  82          KK   SUB08
  83          KM        LOCAL RUNOFF TO BROWN AND HIGLEY ROADS
  84          BA    0.95
  85          LS              83
  86          UK     110   0.005   0.200     100
  87          RK    3090   0.008   0.016    0.16    TRAP    40.0    0.01
  88          RK    2800   0.015   0.200           TRAP     100      20
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 89           KK   BAS08
 90           KM        BASIN FLOW 50-YEAR RETENTION
 91           RS      1    STOR     0.0
 92           SV      0      10      26      50      75
 93           SE      0       1    2.26    3.26     3.5
 94           SQ      0       2       5     800    1100

 95           KK    C08
 96           KM        COMBINE FLOWS AT HIGLEY AND BROWN
 97           HC      2

 98           KK     D8
 99           KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
100           DT    D8S
101           DI      0     247     300    3000
102           DQ      0       0      53    2753

103           KK     R8
104           KM        ROUTE FLOWS FROM HIGLEY TO R.W.C.D.
105           RK   4400   0.008   0.012           CIRC      60

106           KK   SUB10
107           KM        LOCAL RUNOFF TO BROWN ROAD AND R.W.C.D.
108           BA   0.44
109           LS            85                      79
110           UK    110   0.005   0.200      65
111           UK   1325   0.010   0.200      35
112           RK   2600   0.005   0.016    0.11   TRAP      40    0.01
113           RK   4400   0.007   0.020           TRAP     100    0.01

114           KK   C010
115           KM        COMBINE FLOWS AT BROWN AND R.W.C.D.
116           HC      2

117           KK   C011
118           KM        COMBINE FLOWS IN R.W.C.D. AT BROWN ROAD
119           HC      2

120           KK    R11
121           KM        ROUTE FLOWS IN R.W.C.D. TO UNIVERSITY
122           RK   4550  0.0001   0.030           TRAP      80       3

123           KK   SUB12
124           KM        LOCAL RUNOFF TO R.W.C.D. AT UNIVERSITY
125           BA   0.61
126           LS          81.8
127           UK    110   0.005    0.20     100
128           RK   2800  0.0085   0.016    0.12   TRAP      40    0.01
129           RK   5800  0.0001   0.030           TRAP      80       3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 130          KK    CO12
 131          KM        COMBINE FLOWS IN R.W.C.D. U/S OF UNIVERSITY
 132          HC       2

 133          KK   SUB14
 134          KM        LOCAL RUNOFF TO ADOBE AND RECKER
 135          BA    0.25
 136          LS            84.5
 137          UK     350   0.005   0.200     100
 138          RK    2640  0.0076   0.030   0.035    TRAP    40.0    0.01
 139          RK    2640  0.0061   0.016            TRAP    40.0    0.01

 140          KK  RETD6S
 141          KM        RETRIEVE D6S FLOWS
 142          DR     D6S

 143          KK     RD6
 144          KM        ROUTE D6S FLOWS TO ADOBE
 145          RK    2640  0.0061   0.016            TRAP    40.0    0.01

 146          KK    CO14
 147          KM        COMBINE FLOWS AT ADOBE
 148          HC       2

 149          KK     D14
 150          KM        DIVERT FLOWS TO SOUTH ALONG RECKER ROAD
 151          DT    D14S
 152          DI       0     100    1000
 153          DQ       0      47     470

 154          KK     R14
 155          KM        ROUTE FLOWS ALONG ADOBE TO HIGLEY
 156          RK    5280  0.0076   0.016            TRAP    40.0    0.01

 157          KK   SUB16
 158          KM        LOCAL RUNOFF TO HIGLEY AND ADOBE
 159          BA     0.5
 160          LS             86
 161          UK     110   0.005    0.20     100
 162          RK    2640   0.005   0.016   0.125    TRAP    40.0    0.01
 163          RK    5280  0.0076   0.016            TRAP    40.0    0.01

 164          KK   BAS16
 165          KM        BASIN FOR 50-YEAR RETENTION
 166          RS       1    STOR       0
 167          SV       0      15      50     100     175
 168          SQ       0       1     2.6     3.6     4.0
 169          SE       0       2       5     800    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK    CO16
 171          KM        COMBINE FLOWS ALONG ADOBE AT HIGLEY
 172          HC       2

 173          KK  RETDBS
 174          KM        RETRIEVE DBS FLOWS
 175          DR     DBS

 176          KK     RDB
 177          KM        ROUTE DBS FLOW TO ADOBE
 178          RK    2640  0.0038   0.016           TRAP    40.0    0.01

 179          KK    CO17
 180          KM        COMBINE FLOW IN HIGLEY AT ADOBE
 181          HC       2

 182          KK     R17
 183          KM        ROUTE FLOWS ALONG HIGLEY TO UNIVERSITY
 184          RK    2640  0.0061   0.016           TRAP    40.0    0.01

 185          KK   SUB18
 186          KM        LOCAL FLOWS TO 1/8 MI EAST OF HAWES ALONG UNIVERSITY
 187          BA    0.28
 188          LS              83
 189          UK     350  0.0075   0.200     100
 190          RK    2000   0.015   0.050    0.03    TRAP      20      10
 191          RK    4000  0.0067   0.012           CIRC      36

 192          KK     D18
 193          KM        DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
 194          DT    D18S
 195          DI       0      59     134    2000
 196          DQ       0       0      75    1941

 197          KK     R18
 198          KM        ROUTE FLOWS TO 1/4 MI. WEST OF SOSSAMAN ROAD
 199          RK    7700  0.0078   0.012           CIRC      60

 200          KK   SUB20
 201          KM        LOCAL RUNOFF TO 1/4 MI WEST OF SOSSAMAN
 202          BA    0.98
 203          LS              83
 204          UK     350   0.014   0.200     100
 205          RK    5500   0.015   0.050    0.04    TRAP      20      10
 206          RK    7700  0.0053   0.012           CIRC      60

 207          KK    CO20
 208          KM        COMBINE FLOWS 1/8 MI WEST OF SOSSAMAN ROAD
 209          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 210          KK     D20
 211          KM        DIVERT FLOWS IN EXCESS OF 60" PIPE
 212          DT    D20S
 213          DI       0     201    1240    3000
 214          DQ       0       0    1039    2799

 215          KK     R20
 216          KM        ROUTE FLOWS TO BUSH/POWER ROAD
 217          RK    4100  0.0046   0.012           CIRC      72

 218          KK   SUB22
 219          KM        LOCAL RUNOFF TO BUSH/POWER AND UNIVERSITY
 220          BA    0.75
 221          LS             83
 222          UK     350   0.014   0.200     100
 223          RK    7500  0.0147   0.050    0.08    TRAP      20      10
 224          RK    4100  0.0046   0.012           CIRC      72

 225          KK    CO22
 226          KM        COMBINE FLOWS AT BUSH/POWER AND UNIVERSITY
 227          HC       2

 228          KK     D22
 229          KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
 230          DT    D22S
 231          DI       0     320     770    3000
 232          DQ       0       0     450    2680

 233          KK    D22B
 234          KM        DIVERT FLOW IN EXCESS OF 48" PIPE (D/S) INTO REG. BASIN
 235          KD       3
 236          DT   RBAS1
 237          DI       0     150     300    3000
 238          DQ       0       0     150    2850

 239          KK     R22
 240          KM        ROUTE FLOWS TO 72ND STREET
 241          RK    2640  0.0058   0.012           CIRC      60

 242          KK   SUB24
 243          KM        LOCAL RUNOFF TO 72ND STREET AT UNIVERSITY
 244          BA    0.25
 245          LS           84.5
 246          UK     350   0.014   0.200     100
 247          RK    2250   0.011   0.050    0.05    TRAP      20      10
 248          RK    2640  0.0058   0.012           CIRC      60

 249          KK    CO24
 250          KM        COMBINE FLOWS AT 72ND STREET
 251          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK     D24
 253          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
 254          DT    D24S
 255          DI       0     210     450    3000
 256          DQ       0       0     240    2790

 257          KK     R24
 258          KM        ROUTE FLOWS TO RECKER ALONG UNIVERSITY
 259          RK    2640  0.0054   0.012           CIRC      72

 260          KK   SUB26
 261          KM        LOCAL RUNOFF TO RECKER AND UNIVERSITY
 262          BA    1.19
 263          LS           84.5
 264          UK     350    0.01   0.200     100
 265          RK   13700   0.012   0.050    0.20    TRAP      20      10
 266          RK    2640  0.0054   0.012           CIRC      72

 267          KK  RETD4S
 268          KM        RETRIEVE D4S FLOWS
 269          DR     D4S

 270          KK     RD4
 271          KM        ROUTE D4S FLOW TO UNIVERSITY
 272          RK    6760  0.0081   0.030           TRAP      32       4

 273          KK    CD26
 274          KM        COMBINE FOWS AT UNIVERSITY AND RECKER
 275          HC       2

 276          KK    CD27
 277          KM        COMBINE FLOWS AT UNIVERSITY AND RECKER
 278          HC       2

 279          KK     D28
 280          KM        DIVERT FLOWS INTO DETENTION BASIN (Q>72" PIPE)
 281          KD       3
 282          DT    D28B
 283          DI       0     330     680    3000
 284          DQ       0       0     350    2670

 285          KK  RED14S
 286          KM        RETRIEVE D14S FLOWS
 287          DR    D14S

 288          KK    RD14
 289          KM        ROUTE D14S FLOWS TO UNIVERSITY AND RECKER
 290          RK    2640  0.0061   0.016           TRAP      40    0.01
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 291          KK   CD28
 292          KM       COMBINE FLOWS AT UNIVERSITY AND RECKER
 293          HC      2

 294          KK    R28
 295          KM       ROUTE FLOWS TO 1/2 MI WEST OF RECKER
 296          RK   2640  0.0060   0.012           CIRC     72

 297          KK   SUB30
 298          KM       LOCAL RUNOFF TO 56TH STREET
 299          BA   0.055
 300          LS           85.5
 301          UK    110   0.005   0.200    100
 302          RK   1920   0.010   0.016   0.027    TRAP     40    0.01
 303          RK   2640  0.0060   0.012           CIRC     72

 304          KK   CD30
 305          KM       COMBINE FLOWS AT 56TH STREET
 306          HC      2

 307          KK    D30
 308          KM       DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
 309          DT   D30S
 310          DI      0     357     470    3000
 311          DQ      0       0     113    2643

 312          KK   RD30
 313          KM       ROUTE FLOWS TO HIGLEY ROAD
 314          RK   2640  0.0065   0.012           CIRC     78

 315          KK   SUB32
 316          KM       LOCAL RUNOFF TO UNIVERSITY AND HIGLEY
 317          BA   0.45
 318          LS            86
 319          UK    110   0.005   0.200    100
 320          RK   5280  0.0076   0.016   0.050    TRAP     40    0.01
 321          RK   2640  0.0056   0.016           TRAP     40    0.01

 322          KK   CD32
 323          KM       COMBINE FLOWS AT HIGLEY AND UNIVERSITY
 324          HC      2

 325          KK   CD33
 326          KM       COMBINE FLOWS AT HIGLEY AND UNIVERSITY (TOTAL)
 327          HC      2

 328          KK    D33
 329          KM       DIVERT FLOWS IN EXCESS OF 78" STORM DRAIN CAPACITY
 330          DT   D33S
 331          DI      0     473     570    3000
 332          DQ      0       0      97    2527
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 333          KK     R33
 334          KM        ROUTE FLOWS TO R.W.C.D. ALONG UNIVERSITY
 335          RK    1800  0.0069   0.012           CIRC      78

 336          KK    CO34
 337          KM        COMBINE FLOWS IN R.W.C.D. AT UNIVERSITY
 338          HC       2

 339          KK     R34
 340          KM        ROUTE R.W.C.D. FLOWS TO APACHE TRAIL
 341          RK    3340 0.00015   0.030           TRAP     110       3

 342          KK  RED33S
 343          KM        RETRIEVE D33S FLOWS
 344          DR    D33S

 345          KK   RD33S
 346          KM        ROUTE D33S FLOWS TO R.W.C.D. ALONG HIGLEY STORM DRAIN
 347          RK    2640  0.0061   0.012           CIRC      48

 348          KK    CO35
 349          KM        COMBINE FLOW IN R.W.C.D. AT APACHE TRAIL
 350          HC       2

 351          KK     R35
 352          KM        ROUTE R.W.C.D. FLOWS TO BROADWAY
 353          RK    2672  0.0003   0.027           TRAP      90       3

 354          KK   SUB36
 355          KM        LOCAL RUNOFF TO HAWES ROAD
 356          BA    0.94
 357          LS           85.3
 358          UK     300   0.006    0.20     100
 359          RK    5840  0.0086   0.026    0.10   TRAP      30     2.5
 360          RK    5280  0.0065   0.012           CIRC      60

 361          KK  RED18S
 362          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D18
 363          DR    D18S

 364          KK    RD18
 365          KM        ROUTE D18S FLOWS TO BROADWAY
 366          RK    5280  0.0091   0.016           TRAP      40    0.01

 367          KK    CO36
 368          KM        COMBINE FLOWS AT BROADWAY
 369          HC       2

 370          KK     D36
 371          KM        DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
 372          DT    D36S
 373          DI       0     224     290    3000
 374          DQ       0       0      66    2776
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 375          KK     R36
 376          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN ROAD
 377          RK    5280  0.0068   0.012           CIRC      84

 378          KK   SUB38
 379          KM        LOCAL RUNOFF TO SOSSAMAN ROAD
 380          BA    0.84
 381          LS           86.7
 382          UK     150   0.005   0.200     100
 383          RK    5680  0.0045   0.016    0.08    TRAP      40    0.01
 384          RK    5280  0.0068   0.012           CIRC      84

 385          KK    CD38
 386          KM        COMBINE FLOWS AT SOSSAMAN ROAD
 387          HC       2

 388          KK     D38
 389          KM        DIVERT FLOWS IN EXCESS OF 84" STORM DRAIN CAPACITY
 390          DT    D38S
 391          DI       0     554     590    3000
 392          DQ       0       0      36    2446

 393          KK     R38
 394          KM        ROUTE FLOWS FROM 74TH STREET
 395          RK    3960  0.0068   0.012           CIRC      90

 396          KK  RED20S
 397          KM        RETRIEVE FLOWS FROM D20S
 398          DR    D20S

 399          KK    RD20
 400          KM        ROUTE D20S FLOWS TO 74TH STREET AND BROADWAY
 401          RK    5280   0.007   0.016           TRAP      40    0.01

 402          KK   SUB40
 403          KM        LOCAL RUNOFF TO 74TH STREET AND BROADWAY
 404          BA    0.77
 405          LS           85.6
 406          UK     260   0.006   0.200     100
 407          RK    7000  0.0069   0.025     0.1    TRAP      40    0.01
 408          RK    3960  0.0068   0.012           CIRC      90

 409          KK    CD40
 410          KM        COMBINE FLOWS IN SUB 40
 411          HC       2

 412          KK    CD41
 413          KM        COMBINE FLOWS AT 74TH STREET AND BROADWAY
 414          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 415          KK     D41
 416          KM        DIVERT FLOWS IN EXCESS OF 90" STORM DRAIN CAPACITY
 417          DT    D41S
 418          DI       0     650     700    3000
 419          DQ       0       0      50    2350

 420          KK     R41
 421          KM        ROUTE FLOWS FROM 74TH STREET TO POWER ROAD
 422          RK    1320   0.005   0.012            CIRC      90

 423          KK   SUB42
 424          KM        LOCAL RUNOFF TO POWER AND BROADWAY
 425          BA    0.45
 426          LS            84.4
 427          UK     350   0.011   0.200     100
 428          RK    5500  0.0090   0.030     0.1    TRAP      20      10
 429          RK    1320   0.005   0.012            CIRC      90

 430          KK  RED22S
 431          KM        RETRIEVE DIVERTED FLOWS FROM D22
 432          DR    D22S

 433          KK    DR22
 434          KM        ROUTE D22S TO BROADWAY
 435          RK    5280  0.0056   0.016            TRAP      40    0.01

 436          KK    CO42
 437          KM        COMBINE FLOWS AT BROADWAY
 438          HC       2

 439          KK    CO43
 440          KM        COMBINE FLOWS AT POWER ROAD AND BROADWAY
 441          HC       2

 442          KK  DIV43S
 443          KM        DIVERT FLOWS IN EXCESS OF 90" STORM DRAIN
 444          DT    D43S
 445          DI       0     600    1200    3000
 446          DQ       0       0     600    2400

 447          KK    D43B
 448          KM        DIVERT FLOWS IN EXCESS OF 110 CFS INTO REG. BASIN
 449          KO       3
 450          DT   DBAS2
 451          DI       0     110     250    3000
 452          DQ       0       0     140    2890

 453          KK     R43
 454          KM        ROUTE FLOWS FROM POWER ROAD TO 64TH STREET
 455          RK    2640  0.0066   0.016            TRAP    12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 456          KK   SUB44
 457          KM        LOCAL RUNOFF TO BROADWAY
 458          BA    0.48
 459          LS            85.4
 460          UK     230   0.007   0.200     100
 461          RK    2640   0.011   0.016   0.044    TRAP      40    0.01
 462          RK    7900   0.006   0.016            TRAP      60    0.01

 463          KK  RED24S
 464          KM        RETRIEVE FLOWS DIVERTED FROM D24S
 465          DR    D24S

 466          KK    RD24
 467          KM        ROUTE D24S FLOWS TO BROADWAY
 468          RK    5280   0.006   0.016            TRAP      40    0.01

 469          KK    CO44
 470          KM        COMBINE FLOWS IN 64TH STREET
 471          HC       2

 472          KK    CO45
 473          KM        COMBINE FLOWS AT BROADWAY AND 64TH STREET
 474          HC       2

 475          KK     D45
 476          KM        DIVERT FLOWS INTO REGIONAL DETENTION BASIN
 477          KD       3
 478          DT    D45B
 479          DI       0     250     440    3000
 480          DQ       0       0     190    2750

 481          KK     R45
 482          KM        ROUTE FLOWS TO RECKER ROAD
 483          RK    2640  0.0066   0.016            TRAP    12.0     1.5

 484          KK   SUB48
 485          KM        LOCAL RUNOFF TO RECKER ROAD
 486          BA    0.52
 487          LS              86
 488          UK     150   0.007   0.200     100
 489          RK    2640   0.007   0.016    0.04    TRAP      40    0.01
 490          RK    5280   0.007   0.016            TRAP      60    0.01

 491          KK    CO49
 492          KM        COMBINE FLOWS AT RECKER AND BROADWAY
 493          HC       2

 494          KK     R49
 495          KM        ROUTE FLOWS FROM RECKER TO R.W.C.D.
 496          RK    3200  0.0066   0.016            TRAP    12.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 497          KK   SUB50
 498          KM        LOCAL RUNOFF TO R.W.C.D. AND BROADWAY
 499          BA     1.0
 500          LS           85.6
 501          UK     110   0.005   0.200     100
 502          RK    5280  0.0056   0.016     0.2    TRAP      40    0.01
 503          RK    3200  0.0066   0.016            TRAP    12.0     1.5

 504          KK  RED30S
 505          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D30S
 506          DR    D30S

 507          KK    RD30
 508          KM        ROUTE FLOWS FROM D30S
 509          RK    5280  0.0056   0.016            TRAP      40    0.01

 510          KK    CD50
 511          KM        COMBINE FLOWS IN SUB50
 512          HC       2

 513          KK    CD51
 514          KM        COMBINE FLOWS IN BROADWAY AT R.W.C.D.
 515          HC       2

 516          KK    CD52
 517          KM        COMBINE FLOWS IN R.W.C.D. AT BROADWAY
 518          HC       2

 519          KK     R52
 520          KM        ROUTE FLOWS FROM BROADWAY TO FREEWAY ALONG R.W.C.D.
 521          RK    5700  0.0004   0.025            TRAP     120     3.0

 522          KK   SUB54
 523          KM        LOCAL RUNOFF TO R.W.C.D. AT FREEWAY  (LEISURE WORLD)
 524          BA    1.56
 525          LS           84.9
 526          UK     110   0.005   0.200     100
 527          RK    7300   0.006   0.070    0.20    TRAP      40    0.01
 528          RK    8870  0.0004   0.025            TRAP     120     3.0

 529          KK   RET30
 530          KM        BASIN FOR 50-YEAR RETENTION BASIN
 531          RS     1.0    STOR     0.0
 532          SV       0      25      61      67      75      78
 533          SE       0     1.3     2.6     3.1     3.6     3.7
 534          SQ       0       0       0     275     800     925

 535          KK    CD62
 536          KM        COMBINE FLOWS IN R.W.C.D. U/S OF FREEWAY
 537          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 538          KK   SUB56
 539          KM        LOCAL RUNOFF TO SOUTHERN AND 72ND
 540          BA    1.19
 541          LS            86.1
 542          UK     110   0.005    0.20     100
 543          RK    5280   0.004   0.026    0.12    TRAP     120       5
 544          RK    3650  0.0064   0.012            CIRC      72

 545          KK  RET38S
 546          KM        RETRIEVE DIVERTED FLOWS FROM D38S
 547          DR    D38S

 548          KK    RD38
 549          KM        ROUTE FLOWS TO SOUTHERN THROUGH SUB56
 550          RK    8000  0.0049   0.026            TRAP     120       5

 551          KK    CD56
 552          KM        COMBINE FLOWS AT SOUTHERN AND 72ND STREET
 553          HC       2

 554          KK     D56
 555          KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
 556          DT    D56S
 557          DI       0     324     480    3000
 558          DQ       0       0     156    2676

 559          KK  RET41S
 560          KM        RETRIEVE FLOWS DIVERTED FROM D41S
 561          DR    D41S

 562          KK    RD41
 563          KM        ROUTE D41S FLOWS TO SOUTHERN IN 72ND STREET
 564          RK    5280   0.004   0.016            TRAP      40    0.01

 565          KK    CD57
 566          KM        COMBINE FLOW AT 72ND AND SOUTHERN
 567          HC       2

 568          KK     D57
 569          KM        DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
 570          DT    D57S
 571          DI       0     320     600    3000
 572          DQ       0       0     280    2680

 573          KK     R57
 574          KM        ROUTE FLOWS FROM 72ND ST. TO POWER ROAD
 575          RK    2200  0.0075   0.012            CIRC      66

 576          KK  RET43S
 577          KM        RETRIEVE DIVERTED FLOWS FROM D43S
 578          DR    D43S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 579          KK    RD43
 580          KM        ROUTE DIVERTED FLOWS TO POWER AND SOUTHERN
 581          RK    6600   0.003   0.035           TRAP     200      10

 582          KK   SUB58
 583          KM        LOCAL RUNOFF TO POWER ROAD AND SOUTHERN
 584          BA    0.38
 585          LS           84.7
 586          UK     110   0.005   0.200     100
 587          RK    6600   0.003   0.035    0.12   TRAP     200      10
 588          RK    2200  0.0075   0.012           CIRC      66

 589          KK    CO58
 590          KM        COMBINE FLOWS IN SUB58
 591          HC       2

 592          KK    CO59
 593          KM        COMBINE FLOWS IN POWER ROAD
 594          HC       2

 595          KK     D59
 596          KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
 597          DT    D595
 598          DI       0     331     680    3000
 599          DQ       0       0     349    2669

 600          KK     R59
 601          KM        ROUTE FLOWS FROM POWER ROAD TO R.W.C.D.
 602          RK    6500  0.0054   0.012           CIRC      72

 603          KK    CO64
 604          KM        COMBINE FLOWS IN R.W.C.D. AT SOUTHERN
 605          HC       2

 606          KK     R64
 607          KM        ROUTE R.W.C.D. FLOWS TO FREEWAY
 608          RK    3170  0.0004   0.025           TRAP     120     3.0

 609          KK   SUB66
 610          KM        LOCAL RUNOFF TO FREEWAY AND 72ND STREET
 611          BA    0.31
 612          LS           83.8
 613          UK     350   0.006   0.200     100
 614          RK    1600   0.008   0.035    0.03   TRAP       2       4
 615          RK    3200   0.004   0.016           TRAP      10       4

 616          KK  RET56S
 617          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D56S
 618          DR    D56S
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 619          KK    RD56
 620          KM        ROUTE DIVERTED FLOWS TO FREEWAY
 621          RK   1600   0.008   0.035            TRAP      2       4

 622          KK    CO66
 623          KM        COMBINE FLOWS AT FREEWAY AND 72ND STREET
 624          HC       2

 625          KK  RET57S
 626          KM        RETRIEVE DIVERTED FLOWS FROM D57S
 627          DR    D57S

 628          KK    RD57
 629          KM        ROUTE FLOWS TO FREEWAY
 630          RK    1600   0.008   0.035            TRAP      2       4

 631          KK    CO67
 632          KM        COMBINE FLOWS IN FREEWAY AT 72ND
 633          HC       2

 634          KK     R67
 635          KM        ROUTE FLOWS IN FREEWAY TO POWER ROAD
 636          RK    2400   0.004   0.016            TRAP     10       4

 637          KK   SUB68
 638          KM        LOCAL RUNOFF TO POWER ROAD
 639          BA    1.19
 640          LS            84.3
 641          UK     300   0.007    0.20     100
 642          RK    1600   0.008   0.030    0.02    TRAP     11       3
 643          RK    2750   0.004   0.016            TRAP     12       4

 644          KK  RET59S
 645          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D59S
 646          DR    D59S

 647          KK    RD59
 648          KM        ROUTE D59S FLOWS TO FREEWAY
 649          RK    1600   0.008   0.030            TRAP     11     3.0

 650          KK    CO68
 651          KM        COMBINE FLOW IN SUB68
 652          HC       2

 653          KK    CO69
 654          KM        COMBINE FLOWS AT FREEWAY AND POWER ROAD
 655          HC       2

 656          KK  DIVSUP
 657          KM        DIVERT FLOWS INTO PEAK DIVERSION BASINS IN SR360 R.O.W.
 658          KO       3
 659          DT  SUPBAS
 660          DI       0    1500    3000
 661          DQ       0       0    1500
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 662          KK     R69
 663          KM        ROUTE FLOWS FROM POWER ROAD TO R.W.C.D. IN FREEWAY
 664          RK    5280  0.0015   0.016           TRAP    12.0     2.0

 665          KK   SUB70
 666          KM        LOCAL RUNOFF TO R.W.C.D. AND FREEWAY
 667          BA    0.42
 668          LS           76.3
 669          UK    1300   0.002   0.050     100
 670          RK    2640   0.003   0.035    0.11    TRAP      10       3
 671          RK    5280  0.0015   0.016           TRAP      12       2

 672          KK    C070
 673          KM        COMBINE FLOWS AT R.W.C.D. IN FREEWAY CHANNEL
 674          HC       2

 675          KK    C071
 676          KM        COMBINE FLOWS IN R.W.C.D.  AND FREEWAY
 677          HC       2

 678          KK     R71
 679          KM        ROUTE R.W.C.D. FLOWS TO BASELINE
 680          RK    1600  0.0003   0.025           TRAP     140   3.0

 681          KK   SUB72
 682          KM        LOCAL RUNOFF TO POWER AND BASELINE
 683          BA    0.61
 684          LS           80.3
 685          UK     870   0.006   0.200     100
 686          RK    2500  0.0020   0.040    0.04    TRAP       2       4
 687          RK    6200  0.0050   0.012           CIRC      42

 688          KK     D72
 689          KM        DIVERT FLOWS IN EXCESS OF 42" STORM DRAIN
 690          DT    D725
 691          DI       0      47     420    3000
 692          DQ       0       0     373    2953

 693          KK     R72
 694          KM        ROUTE FLOWS TO R.W.C.D.
 695          RK    3200  0.0050   0.012           CIRC      42

 696          KK   SUB74
 697          KM        LOCAL RUNOFF TO R.W.C.D. AND BASELINE
 698          BA    0.51
 699          LS             75
 700          UK     870   0.006   0.200     100
 701          RK    2500  0.0020   0.040    0.04    TRAP       2       4
 702          RK    3200  0.0050   0.012           CIRC      42
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

 703          KK    CO74
 704          KM        COMBINE FLOWS AT R.W.C.D. IN BASELINE
 705          HC       2

 706          KK    CO75
 707          KM        COMBINE FLOWS IN R.W.C.D. AT BASELINE
 708          HC       2

 709          KK     R75
 710          KM        ROUTE FLOWS FROM BASELINE TO GUADALUPE
 711          RK    6070  0.0003   0.025           TRAP     140     3.0

 712          KK   SUB76
 713          KM        LOCAL RUNOFF TO GUADALUPE IN R.W.C.D.
 714          BA    0.29
 715          LS             75
 716          UK      50   0.006   0.025     100
 717          RK    1000   0.005   0.025   0.005    TRAP       2       2
 718          RK    6070  0.0003   0.025           TRAP     140       3

 719          KK    CO76
 720          KM        COMBINE FLOWS IN R.W.C.D. U/S OF GUADALUPE
 721          HC       2

 722          KK   SUB78
 723          KM        LOCAL RUNOFF TO 0.75 MI WEST OF ELLSWORTH
 724          BA    0.14
 725          LS             83
 726          UK     700   0.010   0.200     100
 727          RK    1300   0.007   0.025    0.02    TRAP      40    0.01
 728          RK    3150  0.0065   0.012            CIRC      24

 729          KK     D78
 730          KM        DIVERT FLOWS IN EXCESS OF 24" STORM DRAIN CAPACITY
 731          DT    D78S
 732          DI       0      20     250    3000
 733          DQ       0       0     230    2980

 734          KK     R78
 735          KM        ROUTE FLOWS TO HAWES
 736          RK    2130  0.0065   0.012            CIRC      36

 737          KK   SUB80
 738          KM        LOCAL RUNOFF TO HAWES
 739          BA    0.86
 740          LS           84.1
 741          UK    1600  0.0075   0.200     100
 742          RK    8300   0.008   0.082    0.15    TRAP      40    0.01
 743          RK    2130  0.0065   0.012            CIRC      36
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 744          KK  RET36S
 745          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D36S
 746          DR    D36S

 747          KK    RD36
 748          KM       ROUTE FLOWS D36S TO SOUTHERN
 749          RK    5280  0.0070   0.016           TRAP      15     1.5

 750          KK    CO80
 751          KM       COMBINE FLOWS AT HAWES
 752          HC      2

 753          KK    CO81
 754          KM       COMBINE FLOWS AT HAWES AND SOUTHERN
 755          HC      2

 756          KK     D81
 757          KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
 758          DT    D81S
 759          DI      0      67     490    3000
 760          DQ      0       0     423    2933

 761          KK     R81
 762          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 763          RK    4000  0.0065   0.012           CIRC      60

 764          KK   SUB82
 765          KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND SOUTHERN
 766          BA    0.43
 767          LS           85.1
 768          UK     110   0.005   0.200     100
 769          RK    2600  0.0038   0.016    0.05   TRAP      40    0.01
 770          RK    4000  0.0065   0.012           CIRC      60

 771          KK    CO82
 772          KM       COMBINE FLOWS AT SOSSAMAN CHANNEL AND SOUTHERN
 773          HC      2

 774          KK     R82
 775          KM       ROUTE FLOWS FROM SOUTHERN TO FREEWAY
 776          RK    2200  0.0045   0.030           TRAP      25     1.5

 777          KK   SUB84
 778          KM       LOCAL RUNOFF TO HAWES AND THE FREEWAY
 779          BA    0.35
 780          LS           86.2
 781          UK     500   0.010   0.200     100
 782          RK    3000  0.0087   0.040    0.05   TRAP     2.0     4.0
 783          RK    5280   0.004   0.016           TRAP     5.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 784          KK  RET78S
 785          KM       RETRIEVE DIEVERTED HYDROGRAPH FROM D78S
 786          DR    D78S

 787          KK    DR78
 788          KM       ROUTE D78S FLOWS TO FREEWAY
 789          RK    3000  0.0087   0.040           TRAP     2.0     4.0

 790          KK    CD84
 791          KM       COMBINE FLOWS AT HAWES
 792          HC       2

 793          KK  RET81S
 794          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D81S
 795          DR    D81S

 796          KK    RD81
 797          KM       ROUTE D81S FLOWS TO FREEWAY
 798          RK    3100  0.0061   0.016           TRAP      40    0.01

 799          KK    CD83
 800          KM       COMBINE FLOWS AT HAWES
 801          HC       2

 802          KK     R85
 803          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 804          RK    5280   0.004   0.016           TRAP      28       4

 805          KK   SUB86
 806          KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND FREEWAY
 807          BA    0.46
 808          LS           86.2
 809          UK     150   0.005   0.200     100
 810          RK    3100  0.0061   0.016   0.035    TRAP      40    0.01
 811          RK    4350   0.004   0.016           TRAP      28       4

 812          KK   RET86
 813          KM       BASIN FOR 50 YEAR RETENTION
 814          RS       1    STOR       0
 815          SV       0       7    17.5      22      27      28
 816          SE       0     1.3     2.6     3.1     3.6     3.7
 817          SQ       0       0       0      70     200     240

 818          KK    CD86
 819          KM       COMBINE FLOWS AT SOSSAMAN IN FREEWAY
 820          HC       2

 821          KK    CD87
 822          KM       COMBINE FLOWS IN SOSSAMAN AT FREEWAY
 823          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  824         KK    R87
  825         KM       ROUTE FLOWS FROM FREEWAY TO BASELINE
  826         RK   3800  0.0040   0.030           TRAP      50     3.0

  827         KK   SUB88
  828         KM       LOCAL RUNOFF TO HAWES AND BASELINE
  829         BA   0.53
  830         LS             75
  831         UK    967  0.0065   0.200     100
  832         RK   2300  0.0087   0.040    0.13    TRAP       2       4
  833         RK   4200   0.006   0.012            CIRC      30

  834         KK    D88
  835         KM       DIVERT FLOWS IN EXCESS OF 30" STORM DRAIN CAPACITY
  836         DT   D88S
  837         DI      0      22     440    3000
  838         DQ      0       0     418    2978

  839         KK    R88
  840         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
  841         RK   5000   0.006   0.012            CIRC      42

  842         KK   SUB90
  843         KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL
  844         BA   0.47
  845         LS          86.3
  846         UK    967  0.0065   0.200     100
  847         RK   2300  0.0087   0.040    0.13    TRAP       2       4
  848         RK   5000   0.006   0.012            CIRC      42

  849         KK   CD90
  850         KM       COMBINE FLOWS AT SOSSAMAN IN BASELINE
  851         HC      2

  852         KK   CD91
  853         KM       COMBINE FLOWS IN SOSSAMAN AT BASELINE
  854         HC      2

  855         KK    R91
  856         KM       ROUTE FLOWS IN SOSSAMAN TO GUADALUPE
  857         RK   5300   0.038   0.030            TRAP      50     3.0

  858         KK   SUB92
  859         KM       LOCAL TO GUADALUPE
  860         BA    1.0
  861         LS          81.6
  862         UK   1750   0.005   0.200     100
  863         RK   4950  0.0051   0.040   0.072    TRAP     2.0     4.0
  864         RK   5280  0.0055   0.012            CIRC      36
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 865          KK  RET88S
 866          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D88S
 867          DR    D88S

 868          KK    RD88
 869          KM       ROUTE D88S TO GAUDALUPE
 870          RK    5280  0.0051   0.040           TRAP     2.0     4.0

 871          KK    CD92
 872          KM       COMBINE FLOWS AT GUADALUPE AND HAWES
 873          HC       2

 874          KK     D92
 875          KM       DIVERT FLOWS IN EXCESS OF 36" STORM DRAIN CAPACITY
 876          DT    D92S
 877          DI       0      53     420    3000
 878          DQ       0       0     367    2947

 879          KK     R92
 880          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN CHANNEL
 881          RK    5280  0.0045   0.012           CIRC      48

 882          KK   SUB94
 883          KM       LOCAL RUNOFF TO SOSSAMAN CHANNEL AND GUADALUPE
 884          BA    0.96
 885          LS           80.1
 886          UK     930   0.005   0.200     100
 887          RK    4950  0.0051   0.028    0.09    TRAP      21       2
 888          RK    5280  0.0045   0.012           CIRC      48

 889          KK    CD94
 890          KM       COMBINE FLOWS AT SOSSAMAN AND GUADALUPE
 891          HC       2

 892          KK     D94
 893          KM       DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
 894          DT    D94S
 895          DI       0     110     800    3000
 896          DQ       0       0     690    2890

 897          KK    CD95
 898          KM       COMBINE FLOWS IN SOSSAMAN AT GUADALUPE
 899          HC       2

 900          KK  DIVGUA
 901          KM       DIVERT FLOWS INTO REGIONAL BASIN AT GUADALUPE AND SOSSAMAN
 902          KO       3
 903          DT  GUABAS
 904          DI       0     330     500    3000
 905          DQ       0       0     170    2670
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  906         KK    R95
  907         KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D. ALONG GUADALUPE
  908         RK    5280  0.0048   0.016           TRAP    15.0     1.5

  909         KK   SUB96
  910         KM        LOCAL RUNOFF TO POWER AND GUADALUPE
  911         BA    1.04
  912         LS            75
  913         UK    1750   0.006   0.200     100
  914         RK    5000   0.005   0.040    0.07   TRAP       2       4
  915         RK    5280  0.0048   0.016           TRAP    15.0     1.5

  916         KK    CO96
  917         KM        COMBINE FLOWS IN GUADALUPE AT POWER
  918         HC       2

  919         KK   RET72
  920         KM        RETRIEVE DIVERTED HYDROGRAPH FROM D72S
  921         DR    D72S

  922         KK    DR72
  923         KM        ROUTE D72S FLOWS TO GUADALUPE CHANNEL
  924         RK    5280  0.0022   0.035           TRAP       2       4

  925         KK    CO97
  926         KM        COMBINE FLOWS AT POWER AND GUADALUPE CHANNEL
  927         HC       2

  928         KK    CO98
  929         KM        COMBINE FLOWS IN R.W.C.D. AT GUADALUPE
  930         KO       3
  931         HC       2

  932         KK    R98
  933         KM        ROUTE R.W.C.D. FLOWS FROM GUADALUPE TO ELLIOT
  934         KO       3
  935         RK    5250  0.0003  0.0270           TRAP     140     3.0

  936         KK  SUB100
  937         KM        LOCAL RUNOFF TO ELLSWORTH AND APACHE TRAIL
  938         PR      10
  939         PW       1
  940         PT       1
  941         PW       1
  942         BA    0.82
  943         LS           86.5
  944         UK     150   0.005   0.200     100
  945         RK    3400  0.0088   0.016    0.12   TRAP      40    0.01
  946         RK    5280  0.0023   0.016           TRAP      23     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

947           KK  SUB102
948           KM        LOCAL RUNOFF TO ELLSWORTH AT BROADWAY
949           BA    0.18
950           LS           87.2
951           UK     150   0.005   0.200     100
952           RK    1000   0.004   0.020    0.02    TRAP      40    0.01
953           RK    5280  0.0066   0.012            CIRC      42

954           KK   CO102
955           KM        COMBINE FLOWS AT BROADWAY AND ELLSWORTH
956           HC       2

957           KK    R102
958           KM        ROUTE FLOWS FROM BROADWAY TO SOUTHERN
959           RK    5280  0.0023   0.016            TRAP    25.0     1.5

960           KK  SUB104
961           KM        LOCAL RUNOFF TO 0.67 MI SO. OF BROADWAY
962           BA    0.55
963           LS           86.3
964           UK     150   0.005   0.200     100
965           RK    2500   0.005   0.016    0.05    TRAP    40.0    0.01
966           RK    5650  0.0071   0.035            TRAP      15     3.0

967           KK   CO104
968           KM        COMBINE FLOWS IN ELLSWORTH AT SOUTHERN
969           HC       2

970           KK  SUB106
971           KM        LOCAL RUNOFF TO CRISMON AND BASELINE
972           BA     1.0
973           LS             83
974           UK    1000   0.010   0.200     100
975           RK    2750   0.018   0.040    0.05    TRAP    20.0     4.0
976           RK    5280  0.0064   0.012            CIRC      48

977           KK    D106
978           KM        DIVERT FLOWS IN EXCESS OF 48" STORM DRAIN CAPACITY
979           DT   D106S
980           DI       0     116     250    3000
981           DQ       0       0     134    2884

982           KK    R106
983           KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
984           RK    5280   0.006   0.012            CIRC      66

985           KK  SUB108
986           KM        LOCAL RUNOFF TO SOUTHERN AND ELLSWORTH
987           BA    0.45
988           LS           85.3
989           UK     150   0.005   0.200     100
990           RK    2800   0.007   0.025    0.05    TRAP      20       2
991           RK    5280   0.006   0.012            CIRC      66
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 992          KK   CO108
 993          KM        COMBINE FLOWS IN SOUTHERN AVE
 994          HC       2

 995          KK    D108
 996          KM        DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
 997          DT   D108S
 998          DI       0     220     440    3000
 999          DQ       0       0     220    2780

1000          KK   CO109
1001          KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT SOUTHERN
1002          HC       2

1003          KK    R109
1004          KM        ROUTE FLOWS FROM SOUTHERN TO FREEWAY
1005          RK    2300  0.0022   0.016            TRAP      25     1.5

1006          KK  SUB110
1007          KM       LOCAL RUNOFF TO FREEWAY AT CRISMON
1008          BA    0.77
1009          LS              B5
1010          UK    1250   0.010   0.200     100
1011          RK    2300   0.009   0.040   0.015    TRAP     2.0     4.0
1012          RK   10360   0.004   0.016            TRAP    10.0     2.0

1013          KK  RET106
1014          KM        RETRIEVE DIVERTED HYDROGRAPH FROM SOUTHERN
1015          DR   D106S

1016          KK   RD106
1017          KM        ROUTE D106S FLOWS TO FREEWAY
1018          RK    2300   0.009   0.014            TRAP     2.0     4.0

1019          KK   CO110
1020          KM        COMBINE FLOWS AT CRISMON IN FREEWAY
1021          HC       2

1022          KK    R110
1023          KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH
1024          RK    5280   0.004   0.016            TRAP      16       2

1025          KK  RET108
1026          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D108S
1027          DR   D108S

1028          KK   RD106
1029          KM        ROUTE FLOWS DIVERTED FROM D108S TO FREEWAY
1030          RK    2500   0.007   0.040            TRAP     2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1031          KK   CO111
1032          KM        COMBINE FLOWS IN FREEWAY CHANNEL
1033          HC       2

1034          KK  SUB112
1035          KM        LOCAL RUNOFF TO FREEWAY AT ELLSWORTH
1036          BA    0.47
1037          LS              83
1038          UK    1250   0.010   0.200     100
1039          RK    2500   0.007   0.040    0.05    TRAP     2.0     4.0
1040          RK    5280   0.004   0.016            TRAP    16.0     2.0

1041          KK   CO112
1042          KM        COMBINE FLOWS IN FREEWAY
1043          HC       2

1044          KK   CO113
1045          KM        COMBINE FLOWS IN ELLSWORTH CHANNEL AT FREEWAY
1046          HC       2

1047          KK  DIVELB
1048          KM        DIVERT FLOWS INTO REG. BASIN AT SR360 AND ELLSWORTH
1049          KO       3
1050          DT  ELBBAS
1051          DI       0     250     500    3000
1052          DQ       0       0     250    2750

1053          KK    R113
1054          KM        ROUTE FLOWS FROM FREEWAY TO BASELINE
1055          RK    3190  0.0022   0.016            TRAP    25.0     1.5

1056          KK  SUB114
1057          KM        LOCAL RUNOFF TO SIGNAL BUTTE AND BASELINE
1058          BA    0.70
1059          LS              83
1060          UK    1000   0.008   0.200     100
1061          RK    3200   0.012   0.040   0.046    TRAP     2.0     4.0
1062          RK    5280   0.005   0.012            CIRC      42

1063          KK    D114
1064          KM        DIVERT FLOWS IN EXCESS OF 42" STORM DRAIN CAPACITY
1065          DT   D114S
1066          DI       0      74     220    3000
1067          DQ       0       0     146    2926

1068          KK    R114
1069          KM        ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON ALONG BASELINE
1070          RK    5280   0.005   0.012            CIRC      54
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1071          KK  SUB116
1072          KM       LOCAL RUNOFF TO CRISMON AND BASELINE
1073          BA   0.58
1074          LS            83
1075          UK    500   0.008   0.200    100
1076          RK   3600   0.012   0.040   0.058   TRAP    2.0     4.0
1077          RK   5280   0.005   0.012           CIRC     54

1078          KK   CO116
1079          KM       COMBINE FLOWS AT CRISMON IN BASELINE
1080          HC      2

1081          KK   D116
1082          KM       DIVERT FLOWS IN EXCESS OF 54" STORM DRAIN CAPACITY
1083          DT   D116S
1084          DI      0     156     400    3000
1085          DQ      0       0     244    2844

1086          KK   R116
1087          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG BASELINE
1088          RK   6300  0.0067   0.012           CIRC     60

1089          KK  SUB118
1090          KM       LOCAL RUNOFF TO ELLSWORTH
1091          BA   0.62
1092          LS            92
1093          UK    500   0.010   0.200    100
1094          RK   3000  0.0087   0.040   0.030   TRAP    2.0     4.0
1095          RK   6300  0.0067   0.012           CIRC     60

1096          KK   CO118
1097          KM       COMBINE FLOWS AT ELLSWORTH IN BASELINE
1098          HC      2

1099          KK   D118
1100          KM       DIVERT FLOWS IN EXCESS OF 60" STORM DRAIN CAPACITY
1101          DT   D118S
1102          DI      0     238     760    3000
1103          DQ      0       0     522    2762

1104          KK   CO119
1105          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT BASELINE
1106          HC      2

1107          KK   R119
1108          KM       ROUTE FLOWS FROM BASELINE TO GUADALUPE IN ELLSWORTH CHANNEL
1109          RK   5280  0.0026   0.016           TRAP    15.0     1.5

1110          KK  SUB120
1111          KM       LOCAL RUNOFF TO U/S OF CAP OVERCHUTES
1112          BA   0.88
1113          LS            83
1114          UK    350   0.010   0.200    100
1115          RK   3400  0.0147   0.04    0.040   TRAP    2.0     4.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1116          RK    3900  0.0005   0.035           TRAP     5.0     3.0

1117          KK    R120
1118          KM        ROUTE FLOWS FROM SUB120 TO MERIDIAN AND GUADALUPE
1119          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1120          KK  SUB122
1121          KM        LOCAL RUNOFF TO MERIDIAN AND GUADALUPE
1122          BA    0.71
1123          LS              83
1124          UK     750   0.008    0.20     100
1125          RK    3500  0.0086   0.040    0.05   TRAP     2.0     4.0
1126          RK    5800  0.0086   0.035           TRAP     5.0     3.0

1127          KK   CO122
1128          KM        COMBINE FLOWS AT MERIDIAN AND GUADALUPE
1129          HC       2

1130          KK    R122
1131          KM        ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG GUADALUPE
1132          RK    5280   0.006   0.012           CIRC      72

1133          KK  SUB124
1134          KM        LOCAL RUNOFF TO GUADALUPE AND SIGNAL BUTTE
1135          BA     1.0
1136          LS              83
1137          UK     750   0.008   0.200     100
1138          RK    4100  0.0061   0.040     0.1   TRAP     2.0     4.0
1139          RK    5280   0.006   0.012           CIRC      72

1140          KK   CO124
1141          KM        COMBINE FLOW IN GUADALUPE AT SIGNAL BUTTE
1142          HC       2

1143          KK  RET114
1144          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D114S
1145          DR   D114S

1146          KK   RD114
1147          KM        ROUTE D114S FLOW TO GUADALUPE
1148          RK    5280   0.006   0.040           TRAP     2.0     4.0

1149          KK   CO125
1150          KM        COMBINE FLOW AT SIGNAL BUTTE IN GUADALUPE
1151          HC       2

1152          KK    D125
1153          KM        DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
1154          DT   D125S
1155          DI       0     360     570    3000
1156          DQ       0       0     210    2640
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1157          KK   RD125
1158          KM        ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1159          RK    5280   0.006   0.012            CIRC      78

1160          KK  SUB126
1161          KM        LOCAL RUNOFF TO CRISMON AND GUADALUPE
1162          BA     1.0
1163          LS              83
1164          UK    1100   0.007   0.200     100
1165          RK    3000  0.0083   0.040   0.040    TRAP     2.0     4.0
1166          RK    5280   0.006   0.012            CIRC      78

1167          KK   CO126
1168          KM        COMBINE FLOWS IN GUADALUPE AT CRISMON
1169          HC       2

1170          KK  RET116
1171          KM        RETRIEVE DIVERTED HYDROGRAPH FROM D116S
1172          DR   D116S

1173          KK   RD116
1174          KM        ROUTE D116S FLOWS TO GUADALUPE
1175          RK    5280   0.008   0.040            TRAP     2.0     4.0

1176          KK   CO127
1177          KM        COMBINE FLOWS IN CRISMON IN GUADALUPE
1178          HC       2

1179          KK    D127
1180          KM        DIVERT FLOWS IN EXCESS OF 78" STORM DRAIN
1181          DT   D127S
1182          DI       0     447     780    3000
1183          DQ       0       0     333    2553

1184          KK    R127
1185          KM        ROUTE FLOWS FROM CRISMON TO ELLSWORTH ALONG GUADALUPE
1186          RK    5280   0.005   0.012            CIRC      84

1187          KK  SUB128
1188          KM        LOCAL RUNOF TO ELLSWORTH AND GUADALUPE
1189          BA     1.0
1190          LS            74.7
1191          UK    1500   0.005   0.200     100
1192          RK    4500  0.0067   0.035   0.37     TRAP     2.0     3.0
1193          RK    5280   0.005   0.012            CIRC      84

1194          KK   CO128
1195          KM        COMBINE FLOWS IN GUADALUPE AT ELSWORTH
1196          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1197          KK  RET118
1198          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D118S
1199          DR   D118S

1200          KK   RD118
1201          KM       ROUTE D118S FLOWS TO GUADALUPE
1202          RK    5280  0.0067   0.035           TRAP     2.0     3.0

1203          KK   CO129
1204          KM       COMBINE FLOWS IN GUADALUPE AT ELLSWORTH
1205          HC       2

1206          KK    D129
1207          KM       DIVERT FLOWS IN EXCESS OF 84" STORM DRAIN CAPACITY
1208          DT   D129S
1209          DI       0     462     800    3000
1210          DQ       0       0     338    2538

1211          KK  COE129
1212          KM       COMBINE FLOWS IN ELLSWORTH CHANNEL AT GUADALUPE
1213          HC       2

1214          KK   RE129
1215          KM       ROUTE FLOWS FROM GUADALUPE TO ELLIOT IN ELLSWORTH CHANNEL
1216          RK    5280  0.0022   0.016           TRAP    26.0     1.5

1217          KK  SUB130
1218          KM       LOCAL RUNOFF TO MERIDIAN
1219          BA     2.0
1220          LS             83
1221          UK    1500   0.009   0.200     100
1222          RK    4800   0.009   0.040    0.06    TRAP     2.0     4.0
1223          RK    5000  0.0045   0.035            TRAP    10.0     3.0

1224          KK    R130
1225          KM       ROUTE FLOWS FROM MERIDIAN TO SIGNAL BUTTE ALONG ELLIOT
1226          RK    5280   0.006   0.012            CIRC      66

1227          KK  SUB132
1228          KM       LOCAL RUNOFF TO SIGNAL BUTTE AND ELLIOT
1229          BA     1.2
1230          LS             83
1231          UK     750   0.008   0.200     100
1232          RK    4100   0.006   0.040    0.06    TRAP     2.0     4.0
1233          RK    5280   0.006   0.012            CIRC      66

1234          KK   CO132
1235          KM       COMBINE FLOW AT ELLIOT AND SIGNAL BUTTE
1236          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1237          KK  RET125
1238          KM       RETRIEVE DIVERTED HYDROGRAPH FROM D125S
1239          DR   D125S

1240          KK   RD125
1241          KM       ROUTE D125S FLOWS TO ELLIOT
1242          RK    5280  0.0038   0.035           TRAP     2.0     4.0

1243          KK   CO133
1244          KM       COMBINE FLOWS AT SIGNAL BUTTE AT ELLIOT
1245          HC       2

1246          KK    D133
1247          KM       DIVERT FLOWS IN EXCESS OF 66" STORM DRAIN CAPACITY
1248          DT   D133S
1249          DI       0     295     460    3000
1250          DQ       0       0     165    2705

1251          KK    R133
1252          KM       ROUTE FLOWS FROM SIGNAL BUTTE TO CRISMON
1253          RK    5280  0.0050   0.012           CIRC      78

1254          KK  SUB134
1255          KM       LOCAL RUNOFF TO ELLIOT AT CRISMON
1256          BA     1.0
1257          LS              83
1258          UK     750   0.008   0.200     100
1259          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1260          RK    5280  0.0050   0.012           CIRC      78

1261          KK   CO134
1262          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1263          HC       2

1264          KK  RET127
1265          KM       RETREIVE DIVERTED HYDROGRAPH FROM GUADALUPE
1266          DR   D127S

1267          KK   RD127
1268          KM       ROUTE DIVERTED FLOWS FROM D127S TO ELLIOT
1269          RK    5280   0.008   0.040           TRAP     2.0     4.0

1270          KK   CO135
1271          KM       COMBINE FLOWS AT CRISMON AND ELLIOT
1272          HC       2

1273          KK    D135
1274          KM       DIVERT FLOWS IN EXCESS OF 78" STORM DRAIN CAPACITY
1275          DT   D135S
1276          DI       0     408     720    3000
1277          DQ       0       0     312    2592
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1278          KK   R135
1279          KM       ROUTE FLOWS FROM CRISMON TO ELLSWORTH
1280          RK   5280  0.0050   0.012           CIRC     84

1281          KK  SUB136
1282          KM       LOCAL RUNOFF TO ELLSWORTH AND ELLIOT
1283          BA    1.0
1284          LS            83
1285          UK    750   0.008   0.200    100
1286          RK   4500   0.008   0.040   0.05   TRAP    2.0     4.0
1287          RK   5280  0.0050   0.012           CIRC     84

1288          KK   CO136
1289          KM       COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1290          HC      2

1291          KK  RET129
1292          KM       RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1293          DR   D1295

1294          KK   RD129
1295          KM       ROUTE D1295 FLOWS TO ELLIOT
1296          RK   5280   0.004   0.035           TRAP    2.0     4.0

1297          KK   CO137
1298          KM       COMBINE FLOWS AT ELLIOT AND ELLSWORTH
1299          HC      2

1300          KK    D137
1301          KM       DIVERT FLOWS IN EXCESS OF 84" STORM DRAIN CAPACITY
1302          DT   D137S
1303          DI      0     500     920    3000
1304          DQ      0       0     420    2500

1305          KK  COE137
1306          KM       COMBINE FLOWS IN ELLIOT AT ELLSWORTH
1307          HC      2

1308          KK  DIVELS
1309          KM       DIVERT FLOWS INTO ELLSWORTH REGIONAL BASIN
1310          KO      3
1311          DT  ELSBAS
1312          DI      0      42      84    3000
1313          DQ      0       0      42    2958

1314          KK    R138
1315          KM       ROUTE FLOWS FROM ELLSWORTH TO HAWES ALONG ELLIOT
1316          RK   5280  0.0025   0.016           TRAP   18.0     1.5
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1317          KK  SUB140
1318          KM       LOCAL RUNOFF TO HAWES AND ELLIOT
1319          BA     1.0
1320          LS             83
1321          UK     750   0.008   0.200     100
1322          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1323          RK    5280  0.0025   0.016            TRAP    18.0     1.5

1324          KK   CO140
1325          KM       COMBINE FLOWS AT HAWES AND ELLIOT
1326          HC       2

1327          KK  RET92S
1328          KM       RETRIEVE DIVERTED HYDROGRAPH FROM GUADALUPE
1329          DR    D92S

1330          KK    RD92
1331          KM       ROUTE D92S FLOWS TO ELLIOT
1332          RK    5280   0.004   0.035            TRAP     2.0     4.0

1333          KK   CO141
1334          KM       COMBINE FLOWS AT HAWES AND ELLIOT
1335          HC       2

1336          KK    R141
1337          KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN
1338          RK    5280  0.0023   0.016            TRAP    25.0     1.5

1339          KK  SUB142
1340          KM       LOCAL RUNOFF TO SOSSAMAN AND ELLIOT
1341          BA     1.0
1342          LS             82
1343          UK     750   0.008   0.200     100
1344          RK    4500   0.008   0.040    0.02    TRAP     2.0     4.0
1345          RK    5280  0.0025   0.016            TRAP    25.0     1.5

1346          KK   CO142
1347          KM       COMBINE FLOWS AT SOSSAMAN IN ELLIOT
1348          HC       2

1349          KK   RET94
1350          KM       RETRIEVE DIVERTED FLOWS D94S
1351          DR    D94S

1352          KK    RD94
1353          KM       ROUTE D94S FLOWS TO ELLIOT
1354          RK    5280   0.004   0.035            TRAP     2.0     4.0

1355          KK   CO143
1356          KM       COMBINE FLOWS AT POWER
1357          HC       2
```

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

1358          KK   R143
1359          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1360          RK   3700  0.0021   0.016           TRAP   35.0     1.5

1361          KK  SUB144
1362          KM        LOCAL RUNOFF TO R.W.C.D. AND ELLIOT
1363          BA   0.75
1364          LS            75
1365          UK   1250   0.006   0.200     100
1366          RK   5000  0.0036   0.040   0.050   TRAP    2.0     4.0
1367          RK   3700  0.0021   0.016           TRAP   35.0     1.5

1368          KK   CO144
1369          KM        COMBINE FLOWS AT R.W.C.D. IN ELLIOT
1370          HC       2

1371          KK  DIVELL
1372          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D CAP. INTO REG. BASIN
1373          KD       3
1374          DT  ELLBAS
1375          DI       0     250    1150    3000
1376          DQ       0       0     900    2750

1377          KK   CO145
1378          KM        COMBINE FLOWS IN R.W.C.D. AT ELLIOT
1379          HC       2

1380          KK   R145
1381          KM        ROUTE R.W.C.D. FLOWS FROM ELLIOT TO WARNER
1382          RK   6030  0.0003   0.025           TRAP  150.0     3.0

1383          KK  RET133
1384          KM        RETRIEVE D133S FLOWS
1385          DR   D133S

1386          KK   RD133
1387          KM        ROUTE FLOWS TO CRISMON IN CHANNEL IN SO. ELLIOT ROW
1388          RK   5280  0.0043   0.035           TRAP   25.0     2.0

1389          KK  RET135
1390          KM        RETRIEVE D135S FLOWS
1391          DR   D135S

1392          KK   CO135
1393          KM        COMBINE FLOWS IN SO. ELLIOT ROW CHANNEL
1394          HC       2

1395          KK   RD135
1396          KM        ROUTE FLOWS TO ELLSWORTH IN SO ELLIOT ROW CHANNEL
1397          RK   5280  0.0043   0.035           TRAP   25.0     2.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1398          KK  RET137
1399          KM       RETRIEVE D137S FLOWS
1400          DR   D137S

1401          KK  COD137
1402          KM       COMBINE FLOW IN ELLIOT SO ROW CHANNEL
1403          HC      2

1404          KK   DIVGM
1405          KM       DIVERT FLOW INTO REGIONAL BASIN AT G.M. AND ELLIOT
1406          KO      3
1407          DT   GMBAS
1408          DI      0     250    2500    3000
1409          DQ      0       0    2250    2750

1410          KK   RD137
1411          KM       ROUTE FLOWS TO WARNER AND HAWES
1412          RK    7000  0.0046   0.035           TRAP    10.0     4.0

1413          KK  SUB147
1414          KM       LOCAL RUNOFF TO HAWES AND WARNER
1415          BA     1.0
1416          LS             82
1417          UK     750   0.008   0.200     100
1418          RK    4500   0.008   0.040    0.05    TRAP     2.0     4.0
1419          RK    5280   0.004   0.012            CIRC      72

1420          KK   CO147
1421          KM       COMBINE FLOWS AT HAWES IN WARNER
1422          HC      2

1423          KK  SUB148
1424          KM       LOCAL RUNOFF TO ELLSWORTH AND WARNER
1425          BA    2.66
1426          LS             83
1427          UK    1500   0.007   0.200     100
1428          RK    1500  0.0067   0.040    0.02    TRAP     2.0     4.0
1429          RK    8000  0.0053   0.035            TRAP     5.0     4.0

1430          KK    R148
1431          KM       ROUTE FLOWS FROM ELLSWORTH AND HAWES
1432          RK    5280   0.004   0.012            CIRC      72

1433          KK   CO148
1434          KM       COMBINE FLOWS AT HAWES AND WARNER
1435          HC      2

1436          KK    D148
1437          KM       DIVERT FLOWS IN EXCESS OF 72" STORM DRAIN CAPACITY
1438          DT   D148S
1439          DI      0     301     600    3000
1440          DQ      0       0     299    2699
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1441          KK    R149
1442          KM        ROUTE FLOWS FROM HAWES TO SOSSAMAN
1443          RK    5280  0.0048   0.012           TRAP      78

1444          KK  SUB150
1445          KM        LOCAL RUNOFF TO SOSSAMAN
1446          BA     1.0
1447          LS              80
1448          UK     750   0.008   0.200     100
1449          RK    4500   0.007   0.040    0.05    TRAP     2.0     4.0
1450          RK    5280  0.0048   0.012           CIRC      78

1451          KK   CD150
1452          KM        COMBINE FLOWS AT SOSSAMAN IN WARNER
1453          HC       2

1454          KK    D150
1455          KM        DIVERT FLOWS IN EXCESS OF 78" STORM DRAIN CAPACITY
1456          DT   D150S
1457          DI       0     383     800    3000
1458          DQ       0       0     417    2617

1459          KK    R150
1460          KM        ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1461          RK    3700  0.0047   0.012           CIRC      84

1462          KK  SUB152
1463          KM        LOCAL RUNOFF TO R.W.C.D. AT WARNER
1464          BA    0.70
1465          LS              78
1466          UK     250   0.007   0.200     100
1467          RK    5000  0.0043   0.040    0.05    TRAP     2.0     4.0
1468          RK    3700  0.0047   0.016           CIRC      84

1469          KK   CD152
1470          KM        COMBINE FLOWS AT R.W.C.D. AT WARNER
1471          HC       2

1472          KK  DIVWAR
1473          KM        DIVERT FLOWS IN EXCESS OF R.W.C.D. CAP. AT WARNER
1474          KO       3
1475          DT  WARBAS
1476          DI       0     225    1000    3000
1477          DQ       0       0     775    2775

1478          KK   CD153
1479          KM        COMBINE FLOWS IN R.W.C.D. AT WARNER
1480          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 1481         KK   R153
 1482         KM       ROUTE R.W.C.D. FLOWS TO SUB158
 1483         RK   2200  0.0003   0.025           TRAP   170.0     3.0

 1484         KK  SUB154
 1485         KM       LOCAL RUNOFF TO HAWES
 1486         BA   0.49
 1487         LS            83
 1488         UK   1100   0.006   0.200     100
 1489         RK   2000   0.005   0.040    0.05   TRAP     2.0     4.0
 1490         RK   5800  0.0043   0.035           TRAP    10.0     4.0

 1491         KK  RET148
 1492         KM       RETRIEVE DIVERTED FLOWS FROM D148S
 1493         DR   D148S

 1494         KK   RD148
 1495         KM       ROUTE D148S FLOWS ALONG SOSSAMAN TO SO OF WARNER
 1496         RK   2000   0.005   0.040           TRAP     2.0     4.0

 1497         KK   CO154
 1498         KM       COMBINE FLOWS AT HAWES
 1499         HC       2

 1500         KK   R154
 1501         KM       ROUTE FLOWS FROM HAWES TO SOSSAMAN
 1502         RK   5400  0.0043   0.035           TRAP    10.0     4.0

 1503         KK  SUB156
 1504         KM       LOCAL RUNOFF TO SOSSAMAN SO OF WARNER
 1505         BA   0.73
 1506         LS            83
 1507         UK   1100   0.006   0.200     100
 1508         RK   3000   0.005   0.040    0.05   TRAP     2.0     4.0
 1509         RK   5400  0.0043   0.035           TRAP    10.0     4.0

 1510         KK   CO156
 1511         KM       COMBINE FLOW AT SOSSAMAN
 1512         HC       2

 1513         KK  RET150
 1514         KM       RETRIEVE DIVERTED FLOWS D150S
 1515         DR   D150S

 1516         KK   RD150
 1517         KM       ROUTE D150S FLOWS TO SO OF WARNER ALONG SOSSAMAN
 1518         RK   3000   0.005   0.040           TRAP     2.0     4.0

 1519         KK   CO157
 1520         KM       COMBINE FLOWS AT SOSSAMAN
 1521         HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1522          KK   R157
1523          KM       ROUTE FLOWS FROM SOSSAMAN TO R.W.C.D.
1524          RK   3800  0.0043   0.035           TRAP   10.0     4.0

1525          KK  SUB158
1526          KM       LOCAL RUNOFF TO R.W.C.D. AT SO OF WARNER
1527          BA   0.70
1528          LS             78
1529          UK   1100   0.006   0.200     100
1530          RK   1500   0.005   0.040    0.05   TRAP    2.0     4.0
1531          RK   3800  0.0043   0.035           TRAP   10.0     4.0

1532          KK   CO158
1533          KM       COMBINE FLOWS IN CHANNEL SO OF WARNER AT R.W.C.D.
1534          HC      2

1535          KK  DIVARR
1536          KM       DIVERT FLOWS IN EXCESS OF R.W.C.D. INTO BASIN ABOVE RAY RD.
1537          KO      3
1538          DT  ARRBAS
1539          DI      0     425     850    3000
1540          DQ      0       0     425    2575

1541          KK   CO159
1542          KM       COMBINE FLOWS IN R.W.C.D. SO OF WARNER
1543          HC      2

1544          KK   R159
1545          KM       ROUTE R.W.C.D. FLOWS TO RAY ROAD
1546          RK   3600  0.0003   0.025           TRAP  170.0     3.0

1547          KK  SUB160
1548          KM       LOCAL RUNOFF TO R.W.C.D. AT RAY
1549          BA   1.55
1550          LS             83
1551          UK    250   0.004   0.200     100
1552          RK  14000  0.0045   0.040    0.20   TRAP    2.0     4.0
1553          RK   3600  0.0003   0.025           TRAP  170.0     3.0

1554          KK   CO160
1555          KM       COMBINE FLOWS IN R.W.C.D. AT RAY ROAD
1556          HC      2
1557          ZZ
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                                    ****
              FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****


                        SUPERSTITION FREEWAY  -  MULTI- FRREQUENCY ANALYSIS    (EMF10)
                        EXISTING CONDITION  -  MC KELLIPS TO RAY ROAD
                        MARCH 1987   -  100-YEAR RAINFALL AND 10-YEAR PIPE SYSTEM

  5 ID        OUTPUT CONTROL VARIABLES
                    IPRNT          6  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT         HYDROGRAPH TIME DATA
                     NMIN         15  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        120  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
                   NDTIME       0545  ENDING TIME

              COMPUTATION INTERVAL     .25 HOURS
                   TOTAL TIME BASE   29.75 HOURS

       ENGLISH UNITS

235 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT         DIVERSION
                    ISTAD      RBAS1  DIVERSION HYDROGRAPH IDENTIFICATION

   DI            INFLOW        .00    150.00    300.00   3000.00

   DQ      DIVERTED FLOW       .00       .00    150.00   2850.00

                                                   ***

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

                    DIVERSION HYDROGRAPH    RBAS1

PEAK FLOW    TIME                        MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     29.75-HR
   170.     12.25      (CFS)      67.        17.        13.         13.
                      (INCHES)   .310       .310       .310        .310
                       (AC-FT)    33.        33.        33.         33.

                    CUMULATIVE AREA =    2.01 SQ MI

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

                    HYDROGRAPH AT STATION     D22B
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
150.	12.25	(CFS)	135.	56.	45.	45.
		(INCHES)	.623	1.030	1.030	1.030
		(AC-FT)	67.	110.	110.	110.

CUMULATIVE AREA = 2.01 SQ MI

281 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	D28B	DIVERSION HYDROGRAPH IDENTIFICATION		
DI INFLOW	.00	330.00	680.00	3000.00
DQ DIVERTED FLOW	.00	.00	350.00	2670.00

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DIVERSION HYDROGRAPH D28B

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
757.	12.75	(CFS)	144.	36.	29.	29.
		(INCHES)	.388	.388	.388	.388
		(AC-FT)	71.	71.	71.	71.

CUMULATIVE AREA = 3.45 SQ MI

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HYDROGRAPH AT STATION D28

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
330.	12.25	(CFS)	275.	109.	88.	88.
		(INCHES)	.742	1.172	1.172	1.172
		(AC-FT)	137.	216.	216.	216.

CUMULATIVE AREA = 3.45 SQ MI

449 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	DBAS2	DIVERSION HYDROGRAPH IDENTIFICATION		
DI INFLOW	.00	110.00	250.00	3000.00

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DQ      DIVERTED FLOW        .00       .00    140.00   2890.00

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                    DIVERSION HYDROGRAPH    DBAS2

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   490.      12.25        (CFS)     234.        59.        48.         48.
                        (INCHES)    .726       .736       .736        .736
                         (AC-FT)    116.       118.       118.        118.

                    CUMULATIVE AREA =    3.00 SQ MI

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

                    HYDROGRAPH AT STATION     D43B

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   110.      12.00        (CFS)     110.        61.        49.         49.
                        (INCHES)    .341       .758       .758        .758
                         (AC-FT)     55.       121.       121.        121.

                    CUMULATIVE AREA =    3.00 SQ MI


477 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

DT              DIVERSION
                     ISTAD       D45B  DIVERSION HYDROGRAPH IDENTIFICATION

DI                 INFLOW        .00    250.00    440.00   3000.00

DQ      DIVERTED FLOW        .00       .00    190.00   2750.00

                                                          ***

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

                    DIVERSION HYDROGRAPH     D45B

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     29.75-HR
   436.      12.50        (CFS)      39.        10.         8.          8.
                        (INCHES)    .104       .104       .104        .104
                         (AC-FT)     19.        19.        19.         19.

                    CUMULATIVE AREA =    3.48 SQ MI

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

                    HYDROGRAPH AT STATION      D45
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
250.	12.25	(CFS)	170.	82.	66.	66.
		(INCHES)	.454	.873	.873	.873
		(AC-FT)	84.	162.	162.	162.

CUMULATIVE AREA = 3.48 SQ MI

658 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	SUPBAS	DIVERSION HYDROGRAPH IDENTIFICATION	
DI INFLOW	.00	1500.00	3000.00
DQ DIVERTED FLOW	.00	.00	1500.00

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

DIVERSION HYDROGRAPH SUPBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1152.	12.50	(CFS)	110.	27.	22.	22.
		(INCHES)	.681	.681	.681	.681
		(AC-FT)	54.	54.	54.	54.

CUMULATIVE AREA = 1.50 SQ MI

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HYDROGRAPH AT STATION DIVSUP

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1500.	12.50	(CFS)	459.	131.	106.	106.
		(INCHES)	2.845	3.257	3.257	3.257
		(AC-FT)	228.	261.	261.	261.

CUMULATIVE AREA = 1.50 SQ MI

902 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT DIVERSION

ISTAD	GUABAS	DIVERSION HYDROGRAPH IDENTIFICATION		
DI INFLOW	.00	330.00	500.00	3000.00

```
DQ      DIVERTED FLOW        .00       .00    170.00   2670.00

                                                                  ***

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

                    DIVERSION HYDROGRAPH   GUABAS

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     29.75-HR
  1080.      13.00        (CFS)     291.         73.         59.         59.
                        (INCHES)    .521        .521        .521        .521
                         (AC-FT)    144.        144.        144.        144.

                       CUMULATIVE AREA =    5.20 SQ MI

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

                    HYDROGRAPH AT STATION   DIVGUA

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     29.75-HR
   330.      12.25        (CFS)     326.        151.        121.        121.
                        (INCHES)    .582       1.076       1.076       1.076
                         (AC-FT)    162.        299.        299.        299.

                       CUMULATIVE AREA =    5.20 SQ MI


930 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

931 HC          HYDROGRAPH COMBINATION
                      ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                    HYDROGRAPH AT STATION     CO98

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     29.75-HR
  4861.      13.25        (CFS)    2603.        990.        799.        799.
                        (INCHES)    .916       1.394       1.394       1.394
                         (AC-FT)   1291.       1964.       1964.       1964.

                       CUMULATIVE AREA =   26.43 SQ MI


934 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA
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935 RK KINEMATIC WAVE STREAM ROUTING

L	5250.	CHANNEL LENGTH
S	.0003	SLOPE
N	.027	CHANNEL ROUGHNESS COEFFICIENT
CA	.00	CONTRIBUTING AREA
SHAPE	TRAP	CHANNEL SHAPE
WD	140.00	BOTTOM WIDTH OR DIAMETER
Z	3.00	SIDE SLOPE

***

KINEMATIC STREAM ROUTING USED FOR THIS REACH

COMPUTED KINEMATIC PARAMETERS

ALPHA	M	DT (MIN)	DX (FT)
.0433	1.616	7.50	2625.00

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

HYDROGRAPH AT STATION R98

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
4861.	13.50	(CFS)	2575.	980.	790.	790.
		(INCHES)	.906	1.379	1.379	1.379
		(AC-FT)	1277.	1944.	1944.	1944.

CUMULATIVE AREA = 26.43 SQ MI

1049 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

DT	DIVERSION ISTAD	ELBBAS	DIVERSION HYDROGRAPH IDENTIFICATION			
DI	INFLOW	.00	250.00	500.00	3000.00	
DQ	DIVERTED FLOW	.00	.00	250.00	2750.00	

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DIVERSION HYDROGRAPH ELBBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
2272.	12.50	(CFS)	497.	124.	100.	100.
		(INCHES)	1.090	1.090	1.090	1.090
		(AC-FT)	246.	246.	246.	246.

CUMULATIVE AREA = 4.24 SQ MI

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

                    HYDROGRAPH AT STATION   DIVELB

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
   250.     12.00        (CFS)     246.       113.        91.        91.
                       (INCHES)    .540       .992       .992       .992
                        (AC-FT)    122.       224.       224.       224.

                     CUMULATIVE AREA =    4.24 SQ MI


1310 KO        OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                     ISTAD     ELSBAS  DIVERSION HYDROGRAPH IDENTIFICATION

   DI            INFLOW        .00     42.00     84.00   3000.00

   DQ      DIVERTED FLOW       .00       .00     42.00   2958.00

                                                          ***

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

                    DIVERSION HYDROGRAPH   ELSBAS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
  1408.     13.00        (CFS)    1206.       473.       381.       381.
                       (INCHES)    .704      1.103      1.103      1.103
                        (AC-FT)    598.       937.       937.       937.

                     CUMULATIVE AREA =   15.93 SQ MI

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

                    HYDROGRAPH AT STATION   DIVELS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR    29.75-HR
    42.     12.00        (CFS)     42.        32.        26.        26.
                       (INCHES)    .025       .075       .075       .075
                        (AC-FT)    21.        63.        63.        63.

                     CUMULATIVE AREA =   15.93 SQ MI


1373 KO        OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT          DIVERSION
                     ISTAD     ELLBAS  DIVERSION HYDROGRAPH IDENTIFICATION
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DI            INFLOW        .00    250.00   1150.00   3000.00

DQ      DIVERTED FLOW       .00       .00    900.00   2750.00

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                    DIVERSION HYDROGRAPH   ELLBAS

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
   885.      13.25       (CFS)     332.       83.        67.        67.
                       (INCHES)    .165      .165       .165       .165
                        (AC-FT)    165.      165.       165.       165.

                    CUMULATIVE AREA =   18.68 SQ MI


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

                    HYDROGRAPH AT STATION   DIVELL

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
   250.      12.50       (CFS)     244.      113.        92.        92.
                       (INCHES)    .121      .226       .226       .226
                        (AC-FT)    121.      225.       225.       225.

                    CUMULATIVE AREA =   18.68 SQ MI


1406 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

DT          DIVERSION
                     ISTAD      GMBAS  DIVERSION HYDROGRAPH IDENTIFICATION

DI            INFLOW        .00    250.00   2500.00   3000.00

DQ      DIVERTED FLOW       .00       .00   2250.00   2750.00

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

                    DIVERSION HYDROGRAPH    GMBAS

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR      24-HR      72-HR     29.75-HR
  2579.      13.00       (CFS)     573.      143.       116.       116.
                       (INCHES)    .000      .000       .000       .000
                        (AC-FT)    284.      284.       284.       284.

                    CUMULATIVE AREA =     .00 SQ MI
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                    HYDROGRAPH AT STATION    DIVGM

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   250.     12.50        (CFS)     146.       37.        30.        30.
                       (INCHES)    .000      .000       .000       .000
                        (AC-FT)     72.       73.        73.        73.

                    CUMULATIVE AREA =    .00 SQ MI


1474 KO         OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT           DIVERSION
                      ISTAD     WARBAS  DIVERSION HYDROGRAPH IDENTIFICATION

   DI              INFLOW        .00    225.00   1000.00   3000.00

   DQ       DIVERTED FLOW        .00       .00    775.00   2775.00

                                                                ***

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

                    DIVERSION HYDROGRAPH   WARBAS

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   507.     12.50        (CFS)     221.       57.        46.        46.
                       (INCHES)    .383      .397       .397       .397
                        (AC-FT)    109.      114.       114.       114.

                    CUMULATIVE AREA =    5.36 SQ MI

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

                    HYDROGRAPH AT STATION   DIVWAR

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                  6-HR      24-HR      72-HR     29.75-HR
   225.     12.25        (CFS)     225.      121.        97.        97.
                       (INCHES)    .390      .836       .836       .836
                        (AC-FT)    112.      239.       239.       239.

                    CUMULATIVE AREA =    5.36 SQ MI


1537 KO         OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE

   DT           DIVERSION
                      ISTAD     ARRBAS  DIVERSION HYDROGRAPH IDENTIFICATION
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DI	INFLOW	.00	425.00	850.00	3000.00
DQ	DIVERTED FLOW	.00	.00	425.00	2575.00

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DIVERSION HYDROGRAPH ARRBAS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
1275.	13.25	(CFS)	384.	96.	77.	77.
		(INCHES)	1.858	1.858	1.858	1.858
		(AC-FT)	190.	190.	190.	190.

CUMULATIVE AREA = 1.92 SQ MI

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HYDROGRAPH AT STATION DIVARR

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	29.75-HR
425.	12.75	(CFS)	330.	107.	86.	86.
		(INCHES)	1.598	2.063	2.063	2.063
		(AC-FT)	164.	211.	211.	211.

CUMULATIVE AREA = 1.92 SQ MI

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	SUB02	426.	12.50	84.	26.	21.	.50		
DIVERSION TO	D2S	282.	12.25	26.	7.	5.	.50		
HYDROGRAPH AT	D2	144.	12.25	57.	20.	16.	.50		
ROUTED TO	R2	144.	12.50	57.	20.	16.	.50		
ROUTED TO	R3	104.	14.25	50.	18.	15.	.50		
HYDROGRAPH AT	SUB04	551.	12.50	166.	53.	43.	1.02		
DIVERSION TO	D4S	401.	12.25	64.	16.	13.	1.02		
HYDROGRAPH AT	D4	150.	12.25	101.	37.	30.	1.02		
ROUTED TO	R4	150.	12.50	101.	37.	30.	1.02		
HYDROGRAPH AT	SUB06	427.	12.50	85.	26.	21.	.50		
2 COMBINED AT	C06	577.	12.50	186.	63.	51.	1.52		
DIVERSION TO	D6S	322.	12.25	30.	8.	6.	1.52		
HYDROGRAPH AT	D6	255.	12.25	155.	56.	45.	1.52		
HYDROGRAPH AT	RETD2	282.	12.50	26.	7.	5.	.00		
ROUTED TO	RD2	268.	12.50	25.	6.	5.	.00		
2 COMBINED AT	C07	523.	12.50	181.	62.	50.	1.52		
ROUTED TO	R7	485.	12.50	181.	62.	50.	1.52		
HYDROGRAPH AT	SUB08	817.	12.50	156.	49.	39.	.95		
ROUTED TO	BAS08	345.	13.00	108.	36.	29.	.95	2.69	13.00
2 COMBINED AT	C08	781.	12.75	285.	98.	79.	2.47		
DIVERSION TO	D8S	534.	12.25	89.	22.	18.	2.47		
HYDROGRAPH AT	D8	247.	12.25	196.	76.	61.	2.47		
ROUTED TO	R8	247.	12.50	196.	76.	61.	2.47		
HYDROGRAPH AT	SUB10	316.	12.25	72.	23.	18.	.44		
2 COMBINED AT	C010	539.	12.25	265.	98.	79.	2.91		
2 COMBINED AT	C011	539.	12.25	308.	117.	94.	3.41		

ROUTED TO	R11	388.	14.75	290.	114.	92.	3.41		
HYDROGRAPH AT	SUB12	204.	13.00	87.	29.	24.	.61		
2 COMBINED AT	CO12	574.	13.00	372.	143.	116.	4.02		
HYDROGRAPH AT	SUB14	163.	12.50	42.	13.	11.	.25		
HYDROGRAPH AT	RETD6S	322.	12.50	30.	8.	6.	.00		
ROUTED TO	RD6	305.	12.50	31.	8.	6.	.00		
2 COMBINED AT	CO14	469.	12.50	73.	21.	17.	.25		
DIVERSION TO	D14S	220.	12.50	34.	10.	8.	.25		
HYDROGRAPH AT	D14	248.	12.50	39.	11.	9.	.25		
ROUTED TO	R14	213.	12.75	41.	12.	9.	.25		
HYDROGRAPH AT	SUB16	564.	12.25	95.	30.	24.	.50		
ROUTED TO	BAS16	3.	25.75	3.	2.	1.	.50	88.65	26.50
2 COMBINED AT	CO16	214.	12.75	43.	14.	11.	.75		
HYDROGRAPH AT	RETD8S	534.	12.75	89.	22.	18.	.00		
ROUTED TO	RD8	464.	13.00	91.	23.	18.	.00		
2 COMBINED AT	CO17	675.	12.75	134.	36.	29.	.75		
ROUTED TO	R17	623.	12.75	134.	36.	29.	.75		
HYDROGRAPH AT	SUB18	188.	12.50	45.	14.	12.	.28		
DIVERSION TO	D18S	129.	12.25	14.	4.	3.	.28		
HYDROGRAPH AT	D18	59.	12.25	31.	11.	9.	.28		
ROUTED TO	R18	59.	12.50	31.	11.	9.	.28		
HYDROGRAPH AT	SUB20	646.	12.50	153.	49.	39.	.98		
2 COMBINED AT	CO20	705.	12.50	184.	60.	48.	1.26		
DIVERSION TO	D20S	504.	12.25	59.	15.	12.	1.26		
HYDROGRAPH AT	D20	201.	12.25	125.	45.	36.	1.26		
ROUTED TO	R20	201.	12.50	125.	45.	36.	1.26		
HYDROGRAPH AT	SUB22	435.	12.50	116.	37.	30.	.75		
2 COMBINED AT	CO22	636.	12.50	241.	82.	66.	2.01		
DIVERSION TO	D22S	316.	12.25	39.	10.	8.	2.01		
HYDROGRAPH AT	D22	320.	12.25	202.	72.	58.	2.01		

DIVERSION TO	RBAS1	170.	12.25	67.	17.	13.	2.01
HYDROGRAPH AT	D22B	150.	12.25	135.	56.	45.	2.01
ROUTED TO	R22	150.	12.50	135.	56.	45.	2.01
HYDROGRAPH AT	SUB24	221.	12.50	44.	14.	11.	.25
2 COMBINED AT	CO24	371.	12.50	177.	69.	56.	2.26
DIVERSION TO	D24S	161.	12.25	15.	4.	3.	2.26
HYDROGRAPH AT	D24	210.	12.25	163.	66.	53.	2.26
ROUTED TO	R24	210.	12.50	163.	66.	53.	2.26
HYDROGRAPH AT	SUB26	492.	12.75	193.	63.	51.	1.19
HYDROGRAPH AT	RETD4S	401.	12.50	64.	16.	13.	.00
ROUTED TO	RD4	384.	12.75	64.	16.	13.	.00
2 COMBINED AT	CO26	877.	12.75	257.	79.	64.	1.19
2 COMBINED AT	CO27	1087.	12.75	419.	145.	117.	3.45
DIVERSION TO	D28B	757.	12.25	144.	36.	29.	3.45
HYDROGRAPH AT	D28	330.	12.25	275.	109.	88.	3.45
HYDROGRAPH AT	RED14S	220.	12.50	34.	10.	8.	.00
ROUTED TO	RD14	196.	12.50	35.	10.	8.	.00
2 COMBINED AT	CO28	526.	12.50	310.	119.	96.	3.45
ROUTED TO	R28	515.	12.50	310.	119.	96.	3.45
HYDROGRAPH AT	SUB30	64.	12.25	10.	3.	3.	.05
2 COMBINED AT	CO30	558.	12.50	320.	122.	98.	3.51
DIVERSION TO	D30S	201.	12.25	26.	7.	5.	3.51
HYDROGRAPH AT	D30	357.	12.25	294.	115.	93.	3.51
ROUTED TO	RO30	357.	12.50	293.	115.	93.	3.51
HYDROGRAPH AT	SUB32	468.	12.25	85.	26.	21.	.45
2 COMBINED AT	CO32	809.	12.25	376.	142.	114.	3.96
2 COMBINED AT	CO33	1196.	12.75	509.	178.	144.	4.70
DIVERSION TO	D33S	723.	12.25	140.	35.	28.	4.70
HYDROGRAPH AT	D33	473.	12.25	369.	143.	115.	4.70
ROUTED TO	R33	473.	12.50	369.	143.	115.	4.70

2 COMBINED AT	C034	1047.	13.00	734.	286.	231.	8.73
ROUTED TO	R34	1036.	13.50	742.	286.	231.	8.73
HYDROGRAPH AT	RED33S	723.	12.75	140.	35.	28.	.00
ROUTED TO	RD33S	712.	12.75	141.	35.	28.	.00
2 COMBINED AT	C035	1483.	12.75	870.	321.	259.	8.73
ROUTED TO	R35	1479.	13.00	869.	321.	259.	8.73
HYDROGRAPH AT	SUB36	774.	12.50	166.	52.	42.	.94
HYDROGRAPH AT	RED18S	129.	12.50	14.	4.	3.	.00
ROUTED TO	RD18	117.	12.50	14.	3.	3.	.00
2 COMBINED AT	C036	892.	12.50	180.	56.	45.	.94
DIVERSION TO	D36S	668.	12.25	67.	17.	13.	.94
HYDROGRAPH AT	D36	224.	12.25	114.	39.	32.	.94
ROUTED TO	R36	224.	12.50	113.	39.	32.	.94
HYDROGRAPH AT	SUB38	869.	12.25	163.	51.	41.	.84
2 COMBINED AT	C038	1073.	12.25	276.	90.	72.	1.78
DIVERSION TO	D38S	519.	12.25	46.	11.	9.	1.78
HYDROGRAPH AT	D38	554.	12.25	231.	78.	63.	1.78
ROUTED TO	R38	554.	12.50	231.	78.	63.	1.78
HYDROGRAPH AT	RED20S	504.	12.50	59.	15.	12.	.00
ROUTED TO	RD20	429.	12.50	58.	15.	12.	.00
HYDROGRAPH AT	SUB40	721.	12.50	136.	43.	35.	.77
2 COMBINED AT	C040	1150.	12.50	194.	58.	46.	.77
2 COMBINED AT	C041	1704.	12.50	425.	136.	110.	2.55
DIVERSION TO	D41S	1054.	12.25	103.	26.	21.	2.55
HYDROGRAPH AT	D41	650.	12.25	322.	110.	89.	2.55
ROUTED TO	R41	650.	12.50	322.	110.	89.	2.55
HYDROGRAPH AT	SUB42	370.	12.50	76.	24.	19.	.45
HYDROGRAPH AT	RED22S	316.	12.50	39.	10.	8.	.00
ROUTED TO	DR22	277.	12.75	39.	10.	8.	.00
2 COMBINED AT	C042	576.	12.50	116.	34.	27.	.45

2 COMBINED AT	CO43	1226.	12.50	437.	144.	116.	3.00		
DIVERSION TO	D43S	626.	12.25	94.	24.	19.	3.00		
HYDROGRAPH AT	DIV43S	600.	12.25	343.	121.	97.	3.00		
DIVERSION TO	DBAS2	490.	12.00	234.	59.	48.	3.00		
HYDROGRAPH AT	D43B	110.	12.00	110.	61.	49.	3.00		
ROUTED TO	R43	110.	12.25	110.	61.	49.	3.00		
HYDROGRAPH AT	SUB44	433.	12.50	86.	27.	22.	.48		
HYDROGRAPH AT	RED24S	161.	12.50	15.	4.	3.	.00		
ROUTED TO	RD24	143.	12.50	14.	4.	3.	.00		
2 COMBINED AT	CO44	576.	12.50	100.	30.	25.	.48		
2 COMBINED AT	CO45	686.	12.50	209.	91.	74.	3.48		
DIVERSION TO	D45B	436.	12.25	39.	10.	8.	3.48		
HYDROGRAPH AT	D45	250.	12.25	170.	82.	66.	3.48		
ROUTED TO	R45	250.	12.50	170.	82.	66.	3.48		
HYDROGRAPH AT	SUB48	551.	12.25	99.	30.	25.	.52		
2 COMBINED AT	CO49	789.	12.25	268.	112.	90.	4.00		
ROUTED TO	R49	718.	12.50	268.	112.	90.	4.00		
HYDROGRAPH AT	SUB50	1110.	12.25	187.	58.	47.	1.00		
HYDROGRAPH AT	RED30S	201.	12.50	26.	7.	5.	.00		
ROUTED TO	RD30	180.	12.75	26.	7.	5.	.00		
2 COMBINED AT	CO50	1119.	12.25	213.	64.	52.	1.00		
2 COMBINED AT	CO51	1827.	12.25	480.	176.	142.	5.00		
2 COMBINED AT	CO52	2288.	12.50	1315.	498.	401.	13.73		
ROUTED TO	R52	2270.	13.00	1291.	492.	397.	13.73		
HYDROGRAPH AT	SUB54	566.	13.00	237.	80.	65.	1.56		
ROUTED TO	RET30	258.	14.50	133.	49.	40.	1.56	3.07	14.50
2 COMBINED AT	CO62	2270.	13.00	1404.	541.	436.	15.28		
HYDROGRAPH AT	SUB56	1036.	12.50	216.	68.	55.	1.19		
HYDROGRAPH AT	RET38S	519.	12.25	46.	11.	9.	.00		
ROUTED TO	RO38	311.	12.75	45.	11.	9.	.00		

2 COMBINED AT	C056	1205.	12.50	261.	79.	64.	1.19
DIVERSION TO	D56S	881.	12.25	97.	24.	20.	1.19
HYDROGRAPH AT	D56	324.	12.25	164.	55.	44.	1.19
HYDROGRAPH AT	RET41S	1054.	12.50	103.	26.	21.	.00
ROUTED TO	RD41	915.	12.50	106.	26.	21.	.00
2 COMBINED AT	C057	1239.	12.50	269.	82.	66.	1.19
DIVERSION TO	D57S	919.	12.25	104.	26.	21.	1.19
HYDROGRAPH AT	D57	320.	12.25	165.	56.	45.	1.19
ROUTED TO	R57	320.	12.50	165.	56.	45.	1.19
HYDROGRAPH AT	RET43S	626.	12.50	94.	24.	19.	.00
ROUTED TO	RD43	404.	13.00	92.	23.	19.	.00
HYDROGRAPH AT	SUB58	155.	13.00	62.	21.	17.	.38
2 COMBINED AT	C058	559.	13.00	154.	44.	35.	.38
2 COMBINED AT	C059	879.	13.00	319.	100.	80.	1.57
DIVERSION TO	D59S	548.	12.25	103.	26.	21.	1.57
HYDROGRAPH AT	D59	331.	12.25	216.	74.	60.	1.57
ROUTED TO	R59	331.	12.50	216.	74.	60.	1.57
2 COMBINED AT	C064	2601.	13.00	1613.	615.	496.	16.85
ROUTED TO	R64	2579.	13.00	1604.	612.	494.	16.85
HYDROGRAPH AT	SUB66	204.	12.50	52.	16.	13.	.31
HYDROGRAPH AT	RET56S	881.	12.50	97.	24.	20.	.00
ROUTED TO	RD56	810.	12.50	99.	25.	20.	.00
2 COMBINED AT	C066	1015.	12.50	151.	41.	33.	.31
HYDROGRAPH AT	RET57S	919.	12.50	104.	26.	21.	.00
ROUTED TO	RD57	900.	12.75	106.	26.	21.	.00
2 COMBINED AT	C067	1779.	12.50	256.	68.	55.	.31
ROUTED TO	R67	1699.	12.75	259.	68.	55.	.31
HYDROGRAPH AT	SUB68	934.	12.50	206.	65.	52.	1.19
HYDROGRAPH AT	RET59S	548.	13.00	103.	26.	21.	.00
ROUTED TO	RD59	531.	13.25	104.	26.	21.	.00

2 COMBINED AT	CO68	1062.	12.50	310.	91.	73.	1.19
2 COMBINED AT	CO69	2652.	12.50	569.	159.	128.	1.50
DIVERSION TO	SUPBAS	1152.	12.50	110.	27.	22.	1.50
HYDROGRAPH AT	DIVSUP	1500.	12.50	459.	131.	106.	1.50
ROUTED TO	R69	1500.	12.75	465.	133.	107.	1.50
HYDROGRAPH AT	SUB70	120.	12.75	48.	16.	13.	.42
2 COMBINED AT	CO70	1620.	12.75	512.	149.	120.	1.92
2 COMBINED AT	CO71	4197.	13.00	2083.	761.	614.	18.77
ROUTED TO	R71	4127.	13.00	2082.	760.	613.	18.77
HYDROGRAPH AT	SUB72	188.	13.00	81.	27.	22.	.61
DIVERSION TO	D72S	141.	12.25	39.	10.	8.	.61
HYDROGRAPH AT	D72	47.	12.25	43.	18.	14.	.61
ROUTED TO	R72	47.	12.50	43.	18.	14.	.61
HYDROGRAPH AT	SUB74	101.	13.25	51.	18.	14.	.51
2 COMBINED AT	CO74	148.	13.25	94.	36.	29.	1.12
2 COMBINED AT	CO75	4271.	13.00	2175.	795.	642.	19.90
ROUTED TO	R75	4244.	13.25	2123.	785.	633.	19.90
HYDROGRAPH AT	SUB76	62.	13.25	31.	11.	9.	.29
2 COMBINED AT	CO76	4306.	13.25	2151.	796.	642.	20.19
HYDROGRAPH AT	SUB78	71.	12.50	22.	7.	6.	.14
DIVERSION TO	D78S	51.	12.25	9.	2.	2.	.14
HYDROGRAPH AT	D78	20.	12.25	14.	5.	4.	.14
ROUTED TO	R78	20.	12.50	14.	5.	4.	.14
HYDROGRAPH AT	SUB80	195.	14.00	117.	43.	35.	.86
HYDROGRAPH AT	RET36S	668.	12.50	67.	17.	13.	.00
ROUTED TO	RD36	568.	12.50	68.	17.	14.	.00
2 COMBINED AT	CO80	596.	12.50	181.	60.	48.	.86
2 COMBINED AT	CO81	616.	12.50	195.	65.	52.	1.00
DIVERSION TO	D81S	549.	12.25	129.	32.	26.	1.00
HYDROGRAPH AT	D81	67.	12.25	67.	33.	26.	1.00

ROUTED TO	R81	67.	12.50	67.	33.	26.	1.00		
HYDROGRAPH AT	SUB82	473.	12.25	79.	24.	20.	.43		
2 COMBINED AT	CO82	527.	12.25	142.	57.	46.	1.43		
ROUTED TO	R82	443.	12.50	142.	57.	46.	1.43		
HYDROGRAPH AT	SUB84	250.	12.50	64.	20.	16.	.35		
HYDROGRAPH AT	RET78S	51.	12.50	9.	2.	2.	.00		
ROUTED TO	DR78	50.	12.75	8.	2.	2.	.00		
2 COMBINED AT	CO84	291.	12.50	73.	22.	18.	.35		
HYDROGRAPH AT	RET81S	549.	12.50	129.	32.	26.	.00		
ROUTED TO	RD81	512.	12.75	131.	33.	26.	.00		
2 COMBINED AT	CO83	756.	12.75	203.	55.	45.	.35		
ROUTED TO	R85	756.	12.75	204.	56.	45.	.35		
HYDROGRAPH AT	SUB86	465.	12.25	88.	27.	22.	.46		
ROUTED TO	RET86	139.	13.00	54.	18.	15.	.46	3.37	13.00
2 COMBINED AT	CO86	867.	12.75	257.	74.	60.	.81		
2 COMBINED AT	CO87	1161.	12.75	399.	131.	106.	2.24		
ROUTED TO	R87	1093.	12.75	402.	132.	106.	2.24		
HYDROGRAPH AT	SUB88	105.	13.25	55.	19.	15.	.53		
DIVERSION TO	D88S	83.	12.25	33.	8.	7.	.53		
HYDROGRAPH AT	D88	22.	12.25	22.	11.	9.	.53		
ROUTED TO	R88	22.	12.50	22.	11.	9.	.53		
HYDROGRAPH AT	SUB90	215.	12.75	84.	27.	22.	.47		
2 COMBINED AT	CO90	237.	12.75	105.	38.	31.	1.00		
2 COMBINED AT	CO91	1329.	12.75	507.	170.	137.	3.24		
ROUTED TO	R91	1300.	13.00	507.	170.	138.	3.24		
HYDROGRAPH AT	SUB92	193.	14.00	124.	45.	37.	1.00		
HYDROGRAPH AT	RET88S	83.	13.25	33.	8.	7.	.00		
ROUTED TO	RD88	81.	13.50	33.	8.	7.	.00		
2 COMBINED AT	CO92	267.	13.75	157.	54.	43.	1.00		
DIVERSION TO	D92S	214.	12.50	104.	26.	21.	1.00		

HYDROGRAPH AT	D92	53.	12.50	53.	27.	22.	1.00
ROUTED TO	R92	53.	12.75	53.	27.	22.	1.00
HYDROGRAPH AT	SUB94	255.	13.25	123.	42.	34.	.96
2 COMBINED AT	CO94	308.	13.25	175.	69.	56.	1.96
DIVERSION TO	D94S	198.	12.50	66.	17.	13.	1.96
HYDROGRAPH AT	D94	110.	12.50	109.	53.	43.	1.96
2 COMBINED AT	CO95	1410.	13.00	613.	223.	180.	5.20
DIVERSION TO	GUABAS	1080.	12.25	291.	73.	59.	5.20
HYDROGRAPH AT	DIVGUA	330.	12.25	326.	151.	121.	5.20
ROUTED TO	R95	330.	12.75	324.	150.	121.	5.20
HYDROGRAPH AT	SUB96	128.	14.50	91.	35.	28.	1.04
2 COMBINED AT	CO96	458.	14.50	414.	185.	149.	6.24
HYDROGRAPH AT	RET72	141.	13.00	39.	10.	8.	.00
ROUTED TO	DR72	131.	13.25	39.	10.	8.	.00
2 COMBINED AT	CO97	566.	13.50	453.	195.	157.	6.24
2 COMBINED AT	CO98	4861.	13.25	2603.	990.	799.	26.43
ROUTED TO	R98	4861.	13.50	2575.	980.	790.	26.43
HYDROGRAPH AT	SUB100	896.	12.25	160.	49.	40.	.82
HYDROGRAPH AT	SUB102	216.	12.25	36.	11.	9.	.18
2 COMBINED AT	CO102	1112.	12.25	196.	61.	49.	1.00
ROUTED TO	R102	987.	12.50	198.	61.	49.	1.00
HYDROGRAPH AT	SUB104	551.	12.25	106.	33.	26.	.55
2 COMBINED AT	CO104	1495.	12.50	304.	94.	76.	1.55
HYDROGRAPH AT	SUB106	394.	12.75	155.	51.	41.	1.00
DIVERSION TO	D106S	278.	12.25	62.	15.	12.	1.00
HYDROGRAPH AT	D106	116.	12.25	93.	35.	29.	1.00
ROUTED TO	R106	116.	12.50	93.	35.	29.	1.00
HYDROGRAPH AT	SUB108	478.	12.25	84.	26.	21.	.45
2 COMBINED AT	CO108	577.	12.25	176.	61.	49.	1.45
DIVERSION TO	D108S	357.	12.25	30.	8.	6.	1.45

HYDROGRAPH AT	D108	220.	12.25	145.	54.	43.	1.45
2 COMBINED AT	CO109	1715.	12.50	449.	147.	119.	3.00
ROUTED TO	R109	1690.	12.50	450.	148.	119.	3.00
HYDROGRAPH AT	SUB110	308.	13.00	129.	42.	34.	.77
HYDROGRAPH AT	RET106	278.	12.75	62.	15.	12.	.00
ROUTED TO	RD106	272.	12.75	62.	16.	13.	.00
2 COMBINED AT	CO110	566.	12.75	191.	58.	46.	.77
ROUTED TO	R110	563.	13.00	191.	58.	47.	.77
HYDROGRAPH AT	RET108	357.	12.25	30.	8.	6.	.00
ROUTED TO	RD106	300.	12.50	31.	8.	6.	.00
2 COMBINED AT	CO111	703.	12.50	222.	66.	53.	.77
HYDROGRAPH AT	SUB112	164.	13.00	72.	24.	19.	.47
2 COMBINED AT	CO112	832.	12.50	294.	89.	72.	1.24
2 COMBINED AT	CO113	2522.	12.50	742.	237.	191.	4.24
DIVERSION TO	ELBBAS	2272.	12.00	497.	124.	100.	4.24
HYDROGRAPH AT	DIVELB	250.	12.00	246.	113.	91.	4.24
ROUTED TO	R113	250.	12.25	246.	113.	91.	4.24
HYDROGRAPH AT	SUB114	266.	13.00	109.	36.	29.	.70
DIVERSION TO	D114S	192.	12.25	47.	12.	9.	.70
HYDROGRAPH AT	D114	74.	12.25	62.	24.	19.	.70
ROUTED TO	R114	74.	12.50	62.	24.	19.	.70
HYDROGRAPH AT	SUB116	318.	12.50	92.	30.	24.	.58
2 COMBINED AT	CO116	392.	12.50	154.	54.	43.	1.28
DIVERSION TO	D116S	236.	12.25	35.	9.	7.	1.28
HYDROGRAPH AT	D116	156.	12.25	119.	45.	36.	1.28
ROUTED TO	R116	157.	12.75	118.	45.	36.	1.28
HYDROGRAPH AT	SUB118	343.	12.50	95.	30.	25.	.62
2 COMBINED AT	CO118	451.	12.50	210.	75.	61.	1.90
DIVERSION TO	D118S	213.	12.25	30.	8.	6.	1.90
HYDROGRAPH AT	D118	238.	12.25	180.	68.	55.	1.90

2 COMBINED AT	CO119	488.	12.25	426.	180.	146.	6.14
ROUTED TO	R119	488.	12.75	424.	180.	145.	6.14
HYDROGRAPH AT	SUB120	646.	12.50	142.	45.	36.	.88
ROUTED TO	R120	594.	12.75	143.	45.	36.	.88
HYDROGRAPH AT	SUB122	316.	12.75	112.	36.	29.	.71
2 COMBINED AT	CO122	910.	12.75	255.	81.	65.	1.59
ROUTED TO	R122	897.	12.75	255.	81.	66.	1.59
HYDROGRAPH AT	SUB124	449.	12.75	157.	51.	41.	1.00
2 COMBINED AT	CO124	1346.	12.75	412.	132.	106.	2.59
HYDROGRAPH AT	RET114	192.	13.00	47.	12.	9.	.00
ROUTED TO	RD114	183.	13.00	47.	12.	9.	.00
2 COMBINED AT	CO125	1490.	12.75	458.	144.	116.	2.59
DIVERSION TO	D125S	1130.	12.25	199.	50.	40.	2.59
HYDROGRAPH AT	D125	360.	12.25	260.	94.	76.	2.59
ROUTED TO	RD125	360.	12.50	259.	94.	76.	2.59
HYDROGRAPH AT	SUB126	336.	13.00	152.	51.	41.	1.00
2 COMBINED AT	CO126	696.	13.00	412.	145.	117.	3.59
HYDROGRAPH AT	RET116	236.	12.50	35.	9.	7.	.00
ROUTED TO	RD116	210.	12.75	35.	9.	7.	.00
2 COMBINED AT	CO127	888.	12.75	446.	154.	124.	3.59
DIVERSION TO	D127S	441.	12.25	100.	25.	20.	3.59
HYDROGRAPH AT	D127	447.	12.25	346.	128.	104.	3.59
ROUTED TO	R127	447.	12.50	345.	128.	104.	3.59
HYDROGRAPH AT	SUB128	131.	14.25	91.	35.	28.	1.00
2 COMBINED AT	CO128	578.	14.25	435.	163.	131.	4.59
HYDROGRAPH AT	RET118	213.	12.50	30.	8.	6.	.00
ROUTED TO	RD118	200.	12.75	30.	7.	6.	.00
2 COMBINED AT	CO129	735.	12.75	465.	170.	137.	4.59
DIVERSION TO	D129S	273.	12.50	75.	19.	15.	4.59
HYDROGRAPH AT	D129	462.	12.50	390.	152.	122.	4.59

2 COMBINED AT	COE129	950.	12.75	813.	332.	267.	10.73
ROUTED TO	RE129	950.	13.00	812.	331.	267.	10.73
HYDROGRAPH AT	SUB130	599.	13.25	295.	100.	80.	2.00
ROUTED TO	R130	593.	13.25	295.	100.	80.	2.00
HYDROGRAPH AT	SUB132	538.	12.75	187.	61.	49.	1.20
2 COMBINED AT	CO132	1035.	13.00	480.	160.	129.	3.20
HYDROGRAPH AT	RET125	1130.	12.75	199.	50.	40.	.00
ROUTED TO	RD125	1019.	13.00	198.	50.	40.	.00
2 COMBINED AT	CO133	2054.	13.00	678.	210.	169.	3.20
DIVERSION TO	D133S	1759.	12.25	414.	104.	84.	3.20
HYDROGRAPH AT	D133	295.	12.25	264.	106.	86.	3.20
ROUTED TO	R133	295.	12.50	263.	106.	86.	3.20
HYDROGRAPH AT	SUB134	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CO134	743.	12.75	418.	157.	126.	4.20
HYDROGRAPH AT	RET127	441.	12.75	100.	25.	20.	.00
ROUTED TO	RD127	423.	13.00	100.	25.	20.	.00
2 COMBINED AT	CO135	1119.	13.00	518.	182.	147.	4.20
DIVERSION TO	D135S	711.	12.25	163.	41.	33.	4.20
HYDROGRAPH AT	D135	408.	12.25	355.	141.	114.	4.20
ROUTED TO	R135	408.	12.50	354.	141.	114.	4.20
HYDROGRAPH AT	SUB136	448.	12.75	156.	50.	41.	1.00
2 COMBINED AT	CO136	856.	12.75	509.	192.	155.	5.20
HYDROGRAPH AT	RET129	273.	12.75	75.	19.	15.	.00
ROUTED TO	RD129	246.	13.00	75.	19.	15.	.00
2 COMBINED AT	CO137	1055.	13.00	584.	210.	170.	5.20
DIVERSION TO	D137S	555.	12.25	146.	36.	29.	5.20
HYDROGRAPH AT	D137	500.	12.25	438.	174.	140.	5.20
2 COMBINED AT	COE137	1450.	13.00	1248.	505.	407.	15.93
DIVERSION TO	ELSBAS	1408.	12.00	1206.	473.	381.	15.93
HYDROGRAPH AT	DIVELS	42.	12.00	42.	32.	26.	15.93

ROUTED TO	R138	42.	13.25	42.	31.	25.	15.93
HYDROGRAPH AT	SUB140	445.	12.75	155.	50.	41.	1.00
2 COMBINED AT	CO140	487.	12.75	197.	82.	66.	16.93
HYDROGRAPH AT	RET92S	214.	13.75	104.	26.	21.	.00
ROUTED TO	RD92	212.	14.00	103.	26.	21.	.00
2 COMBINED AT	CO141	539.	13.00	299.	108.	87.	16.93
ROUTED TO	R141	530.	13.00	297.	107.	86.	16.93
HYDROGRAPH AT	SUB142	390.	13.00	144.	48.	38.	1.00
3 COMBINED AT	CO142	920.	13.00	441.	155.	125.	17.93
HYDROGRAPH AT	RET94	198.	13.25	66.	17.	13.	.00
ROUTED TO	RD94	192.	13.50	66.	17.	13.	.00
2 COMBINED AT	CO143	1065.	13.00	507.	171.	138.	17.93
ROUTED TO	R143	1047.	13.25	506.	171.	138.	17.93
HYDROGRAPH AT	SUB144	113.	14.00	69.	26.	21.	.75
2 COMBINED AT	CO144	1135.	13.25	574.	196.	158.	18.68
DIVERSION TO	ELLBAS	885.	12.50	332.	83.	67.	18.68
HYDROGRAPH AT	DIVELL	250.	12.50	244.	113.	92.	18.68
2 COMBINED AT	CO145	5111.	13.50	2813.	1093.	882.	45.11
ROUTED TO	R145	5064.	13.75	2769.	1077.	868.	45.11
HYDROGRAPH AT	RET133	1759.	13.00	414.	104.	84.	.00
ROUTED TO	RD133	1733.	13.00	413.	103.	83.	.00
HYDROGRAPH AT	RET135	711.	13.00	163.	41.	33.	.00
2 COMBINED AT	CO135	2445.	13.00	576.	144.	116.	.00
ROUTED TO	RD135	2290.	13.25	574.	144.	116.	.00
HYDROGRAPH AT	RET137	555.	13.00	146.	36.	29.	.00
2 COMBINED AT	COD137	2829.	13.00	719.	180.	145.	.00
DIVERSION TO	GMBAS	2579.	12.50	573.	143.	116.	.00
HYDROGRAPH AT	DIVGM	250.	12.50	146.	37.	30.	.00
ROUTED TO	RD137	250.	14.00	145.	37.	30.	.00
HYDROGRAPH AT	SUB147	416.	12.75	149.	48.	39.	1.00

2 COMBINED AT	CO147	624.	13.00	293.	85.	69.	1.00
HYDROGRAPH AT	SUB148	716.	13.25	389.	133.	108.	2.66
ROUTED TO	R148	715.	13.50	389.	133.	108.	2.66
2 COMBINED AT	CO148	1284.	13.00	680.	219.	176.	3.66
DIVERSION TO	D148S	983.	12.25	393.	98.	79.	3.66
HYDROGRAPH AT	D148	301.	12.25	289.	121.	97.	3.66
ROUTED TO	R149	301.	12.75	287.	120.	97.	3.66
HYDROGRAPH AT	SUB150	352.	12.75	134.	44.	36.	1.00
2 COMBINED AT	CO150	653.	12.75	420.	164.	132.	4.66
DIVERSION TO	D150S	270.	12.50	60.	15.	12.	4.66
HYDROGRAPH AT	D150	383.	12.50	359.	149.	120.	4.66
ROUTED TO	R150	383.	12.75	359.	149.	120.	4.66
HYDROGRAPH AT	SUB152	363.	12.50	89.	29.	23.	.70
2 COMBINED AT	CO152	732.	12.50	444.	178.	143.	5.36
DIVERSION TO	WARBAS	507.	12.25	221.	57.	46.	5.36
HYDROGRAPH AT	DIVWAR	225.	12.25	225.	121.	97.	5.36
2 COMBINED AT	CO153	5289.	13.75	2994.	1197.	966.	50.47
ROUTED TO	R153	5125.	13.75	2972.	1188.	959.	50.47
HYDROGRAPH AT	SUB154	152.	13.00	73.	25.	20.	.49
HYDROGRAPH AT	RET148	983.	13.00	393.	98.	79.	.00
ROUTED TO	RD148	971.	13.25	392.	98.	79.	.00
2 COMBINED AT	CO154	1123.	13.25	465.	123.	99.	.49
ROUTED TO	R154	1117.	13.25	463.	122.	99.	.49
HYDROGRAPH AT	SUB156	226.	13.25	109.	36.	29.	.73
2 COMBINED AT	CO156	1343.	13.25	572.	159.	128.	1.22
HYDROGRAPH AT	RET150	270.	12.75	60.	15.	12.	.00
ROUTED TO	RD150	262.	13.00	60.	15.	12.	.00
2 COMBINED AT	CO157	1567.	13.25	632.	174.	140.	1.22
ROUTED TO	R157	1546.	13.25	631.	174.	140.	1.22
HYDROGRAPH AT	SUB158	155.	13.25	83.	29.	23.	.70

2 COMBINED AT	CO158	1700.	13.25	714.	202.	163.	1.92
DIVERSION TO	ARRBAS	1275.	12.75	384.	96.	77.	1.92
HYDROGRAPH AT	DIVARR	425.	12.75	330.	107.	86.	1.92
2 COMBINED AT	CO159	5550.	13.75	3260.	1295.	1045.	52.39
ROUTED TO	R159	5543.	14.00	3242.	1284.	1036.	52.39
HYDROGRAPH AT	SUB160	599.	13.00	225.	75.	61.	1.55
2 COMBINED AT	CO160	5868.	14.00	3403.	1359.	1097.	53.94

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

FIGURE

EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY
MULTI-FREQUENCY ANALYSIS
HEC-1 SCHEMATIC
STORM DRAIN MODEL
2-,5- AND 10 - YR. SYSTEMS

JUNE 1987

FLOOD CONTROL DISTRICT RECEIVED MAY 0 2008

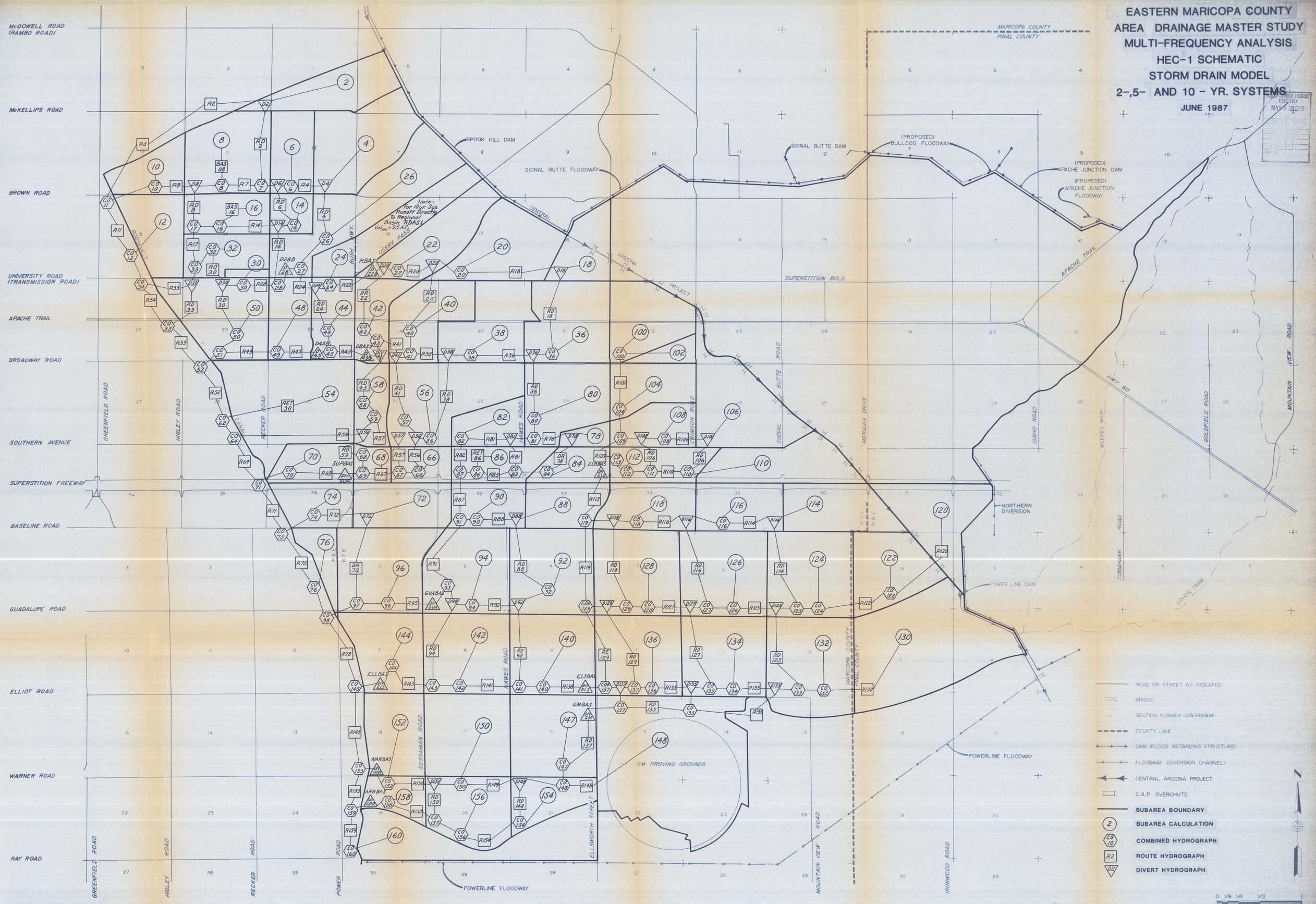
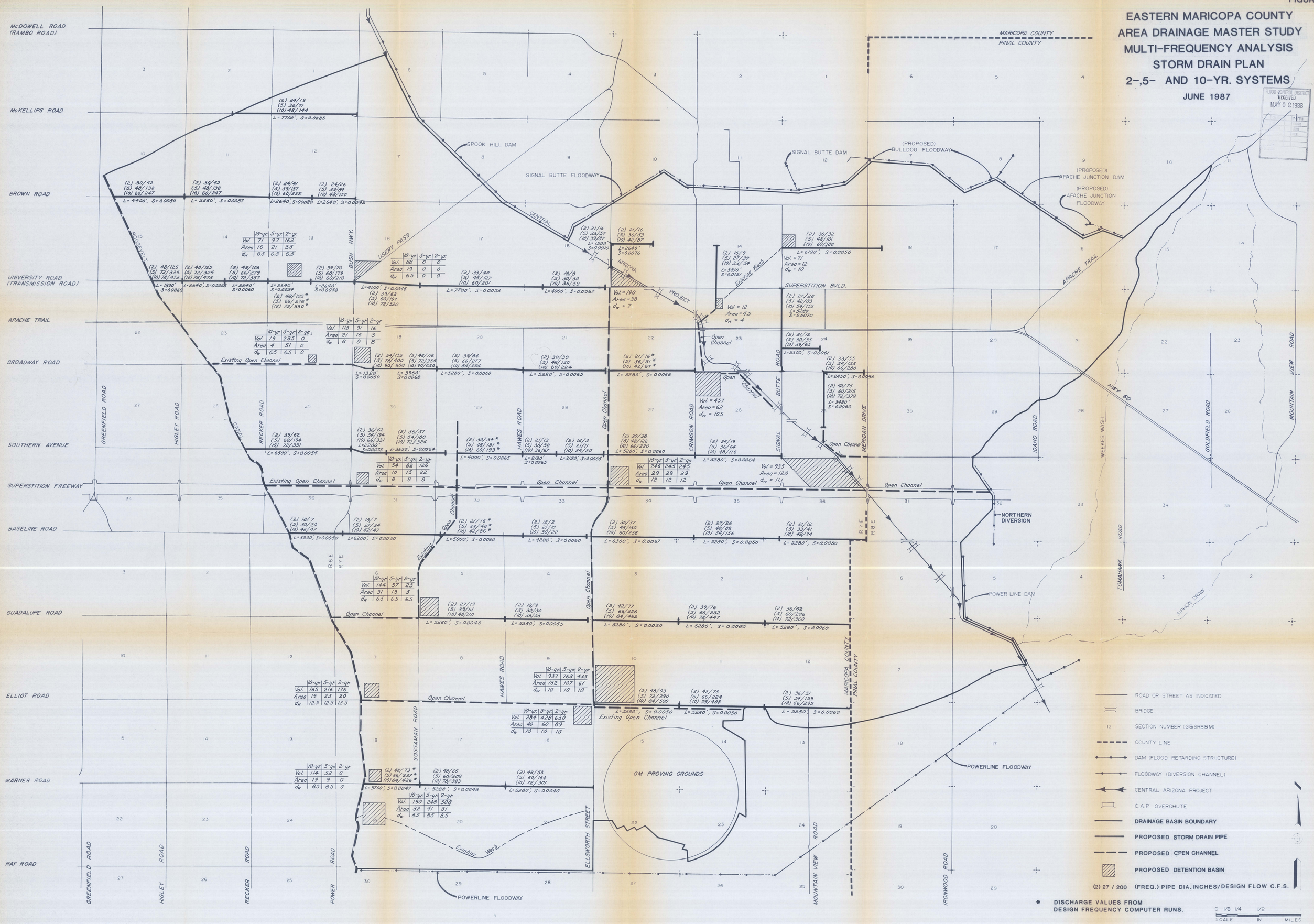


FIGURE 4

EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY MULTI-FREQUENCY ANALYSIS STORM DRAIN PLAN 2-,5- AND 10-YR. SYSTEMS

JUNE 1987

FLOOD CONTROL DISTRICT RECEIVED MAY 0 2 1988