CITY OF SCOTTSDALE

DESERT GREENBELT
PIMA ROAD THREE BASINS PROJECT

Ultimate Design Hydrology Memo

The Desert Greenbelt
SCOTTSDALE, ARIZONA

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SCI Project No: 28900051

March 1998

Stantech
Consulting

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Reference: **CITY OF SCOTTSDALE**
DESERT GREENBELT
PR3B PROJECT
FILE: 28900051

Sender: George V. Sabol, PhD, PE

Date: 1 April, 1998

For your information
For your comment
X For your review
For your approval
X As requested.

Attachments:

Four (4) copies of the Design Hydrology Memorandum, Ultimate Condition.

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1.0 Introduction

1.1 GENERAL

The basis of the watershed hydrology including mapping, methodology and model input parameters, is presented in the Watershed Hydrology and Concept Design Report. That report was issued as a final draft in January 1997 under the title Desert Greenbelt Project, Pima Road Channel, Design Hydrology Memorandum, by George V. Sabol Consulting Engineers, Inc. (GVSCE). That report was prepared and submitted as part of the design review of the Pima Road Channel for the City of Scottsdale by GVSCE. In October 1996, the firm GVSCE was acquired by Stantech Consulting, Inc., and the design review was subsequently completed by GVSCE. The previous Design Hydrology Memorandum by GVSCE was finalized by Stantech as part of the **Pima Road Three Basins (PR3B) Project** and was submitted as the Watershed Hydrology and Concept Design Report, November 1997, which is herein referred to as the Concept Hydrology Report.

The PR3B designs and analyses have identified areas and locations within the project watershed that require refinement or revision to the peak discharges and detention basin stage/storage/discharge characteristics presented in the Concept Hydrology Report. Most of the changes are due to updated information regarding land use, and drainage patterns, a decision by the City of Scottsdale concerning which of the Deer Valley Detention Basin options to pursue and revisions to the original design concept. Revisions to the original design concept include additional drainage areas west of Grayhawk, modification of Union Hills Detention Basin location and configuration and a revised conveyance system downstream of the Deer Valley Detention Basin. The results presented in this document are for the ultimate condition which includes the overall watershed and all three detention basins. The purpose is to update, refine, and/or revise the results presented in the Concept Hydrology Report as required to produce design hydrology for the PR3B Project.

1.2 BACKGROUND

Several hydrology studies of the PR3B watershed have been conducted by various entities and consultants for the purposes of FEMA flood hazard delineation, highway drainage studies, land development, and the City of Scottsdale, Desert Greenbelt

Project. Most of those models and analyses were either reviewed, revised, and/or incorporated into the final Concept Hydrology Report.

The Concept Hydrology Report documents the results of a detailed comparison between the predominant modeling methodology originally established for the watershed in the late 1980s and widely used to date (referred to as the City of Scottsdale method), and the Flood Control District of Maricopa County's methodology. The conclusion of that comparative analysis was to adopt the City of Scottsdale modeling methodology in order to provide regionally consistent hydrologic modeling.

2.0 Watershed Base Maps

All watershed maps for this design memorandum essentially duplicate those used in the Concept Hydrology Report, with the exception of any of the changes previously discussed. Table 2-1 summarizes the watershed maps used for this design memorandum.

TABLE 2-1

Summary of watershed maps

Map Name	Map Title	Description	Map Scale
(1)	(2)	(3)	(4)
Plate 1	Overall Watershed Map	General map of the entire watershed showing all subbasins and points of concentration (2 sheets).	1 inch = 1,000 feet
Plate 2	DC Ranch Onsite Watershed Map	Map of subbasin delineation's, identifications, and routing schematic per Wood/Patel Associates.	1 inch = 300 feet
Plate 3	Grayhawk Onsite Watershed Map	Map of subbasin delineation's, identifications, and routing schematic per DEI Professional Services.	1 inch = 400 feet

Topographic base mapping for the project hydrology is supplied by the City of Scottsdale. That mapping is either 1-foot or 2-foot contour interval topography compiled at a plan scale of 1 inch = 100 feet and is based on 1993 aerial photography.

Survey control for the mapping was provided by Greiner, Inc. and the photogrammetry was performed by Michael Baker Jr., Inc.

On-site hydrology maps for DC Ranch and Grayhawk are respectively shown in Plates 2 and 3. DC Ranch hydrology modeling and mapping were obtained from Wood/Patel &Associates, Inc. Grayhawk hydrology modeling and mapping were obtained from Development Engineering, Inc. Subbasin naming and concentration point numbering for each of the models are maintained, and minor operational adjustments were made for insertion of those models into the PR3B modeling. In general, however, the models for both developments are unchanged.

3.0 Hydrology

Hydrologic modeling is performed using the U.S. Army Corps of Engineers' (USACOE) HEC-1 Flood Hydrograph Package computer model, version 4.0.1E, September 1990, as implemented by Dodson and Associates. Both the 100-year, 6- and 24-hour storms are modeled for the entire watershed. Both the 6- and 24-hour rainfalls are according to the hypothetical distribution option in HEC-1. Key rainfall depth-duration-frequency statistics are obtained from the Precipitation-Frequency Atlas for Arizona (NOAA Atlas II), with point rainfall depth-duration-frequency data developed by the PREFRE program. Subbasin rainfall/runoff characteristics are modeled using kinematic wave methodology. Rainfall losses are estimated by the use of SCS curve numbers for pervious areas and an estimate of percent impervious area (RTIMP) to account for rooftops and paved areas. Channel routing is accomplished using the normal depth option of the Modified Puls method. Reservoir storage routing is performed using the level pool option of the Modified Puls method.

Subbasin boundaries and watershed flow patterns are determined from 1- or 2-foot contour interval worksheets of the watershed, field reconnaissance, construction drawings, and inspection of aerial photography. Curve number (CN) selection is generally per City of Scottsdale, Design Standards and Procedures Manual, Chapter 2, Section 2.2, Hydrology (COS Design Manual), and is based on soil type and vegetation. Vegetation cover is estimated to be natural desert in "poor" condition. Land use type and densities are obtained from current zoning classifications and discussions with City of Scottsdale staff. Those densities are used to select the RTIMP for each subbasin. With the exception of currently undeveloped tracts of land

along Outer Loop Freeway, all rainfall loss parameters assume future full build-out conditions. Rainfall loss parameters are modeled as existing condition to account for future on-site retention that will be required by the City of Scottsdale for new developments in this area.

3.1 REFINEMENTS AND REVISIONS

Hydrologic changes include subbasin additions and boundary adjustments, with a majority of those changes occurring in the watershed immediately upstream of the Outer Loop Freeway and in the upper portions of the watershed generally north of the Deer Valley Road alignment. Concept Design changes include:

- Revision of the Union Hills Detention Basin to extend from Scottsdale Road to the proposed Union Hills Drive alignment along the north side of the Outer Loop Freeway. The revised basin is herein referred to as the Outer Loop Basin.
- Addition of approximately 0.9 square miles of watershed that is located west of Grayhawk and north of the Outer Loop Basin.
- Change the design criteria for the Outer Loop Basin from 100-year, 6-hour design to 100-year, 24-hour design.
- Revised the alignment of the Union Hills Detention Basin outlet conduit to follow the Hayden Road alignment to a channel through the Tournament Players Club Desert Golf Course south of Bell Road.
- Change in the conveyance system from the Deer Valley Basin to the Outer Loop Basin.
- Addition of a spur-dike along the new Union Hills Drive alignment from the new Pima Road alignment to the Outer Loop Freeway.

In general, the overall watershed delineation and subbasin modeling parameters are essentially the same as that shown in the Concept Hydrology Report, with the exception of the following specific changes:

- Subbasin S34.1 is divided into two subbasins, S34.1 and S34.2.
- Subbasin S36R1 is divided into two subbasins, S36R1A and S36R1B.

- Subbasin S36R2 is divided into two subbasins, S36R2A and S36R2B.
- Subbasin SCN5C is divided into two subbasins, SCN5C and SCN5D to reflect revised drainage boundaries along the Outer Loop Basin.
- Subbasin SCN6 is divided into four subbasins, SCN6B, SCN6C, SCN6D, and SCN6E to account for better delineation of the Water Campus, CAP Water Treatment Plant and Solid Waste Transfer Station. Rainfall loss and kinematic wave parameters are revised to reflect the proposed land uses. Areas within the Water Campus, CAP Water Treatment Plant and Solid Waste Transfer Station that will store intercepted rainfall (i.e. lagoons, filter beds, water treatment/storage structures exposed to the atmosphere, etc.) are excluded from the subbasin area and indicated as "NC" for non-contributing.
- Subbasins SCN6A and S54 are eliminated from the watershed due to a proposed spur dike that will be built along the Union Hills Drive alignment.
- Minor basin boundary shifts in Subbasins S53A and S53A1
- Addition of subbasins SCNA1, SCNA2, SCNA3, SCNA4 and SCNA5 as well as a portion of the Grayhawk model west of the Hayden Road alignment and north of Thompson Peak Parkway.

Table A-1 of Appendix A summarizes the revised/refined subbasin modeling parameters for the "ultimate" PR3B hydrology models.

The following are specific changes to the Concept Hydrology Report with regard to combining and routing operations:

- Added combine operation C34.2 to provide a discharge entering Happy Valley Basin from the north.
- Revised the combine operation C34.1, to provide a discharge entering Happy Valley Basin from the east.
- Added combine operation HVDB-I to provided basin inflow hydrograph and renamed storage routing operation to HVDB-O.

- Added combine operation C36R1A to provide a discharge in the channel approximately 1,000 feet north of Pinnacle Peak Road and Pima Road.
- Renamed the combine operation C36R1 to C36R1B.
- Added combine operation C36R2A to provide a discharge in the channel approximately 2,000 feet south (East Paraiso Drive) of Pinnacle Peak Road and Pima Road.
- Renamed the combine operation C36R2 to C36R2B.
- Renamed combine operation C51.1I at Deer Valley Basin to DVDB-I and storage routing operation C51.1O to DVDB-O.
- Added combine operation C53A1 to provide discharge in the pipeline approximately 1,400 feet west of Pima Road.
- Pima Channel routing lengths and geometry changed to reflect the proposed PR3B designs.
- Revised stage/storage/discharge rating relations for Happy Valley, Deer Valley, and Union Hills Detention Basins/Outer Loop Basin to reflect the refined and/or revised basin and discharge conduit configurations of the PR3B Project.
- Added combine operations CN5D, CN6D, CP6D, CP6C, CP5D, PIMA, CA2, CPA2, CPA3, CPA4 and MILLER to provide design discharges at various locations along the Outer Loop Basin.
- Renamed combine operation UHDB-I at Union Hills Detention Basin to OLDB-I and storage routing operation UHDB-O to OLDB-O.

Plate 1 is a general map of the watershed and shows all subbasins and points of concentration. Detailed subbasin delineation for the DC Ranch and Grayhawk developments are shown in plates 2 and 3 respectively.

The design discharges for the PR3B system are contingent upon the routing characteristics of the three detention basins. The storage routing parameters presented herein are based on 10 percent design and layout of the basins and respective outlet. The stage versus storage versus discharge curves plus supporting technical

documentation for Happy Valley and Deer Valley are respectively provided in Appendices B and C. The stage discharge curve for the Outer Loop Basin is based on inlet control for 2-108" diameter conduits. The stage storage relationship is developed from a typical cross with a longitudinal slope of 0.2%. The typical cross section and depth to invert data are provided in Appendix D.

3.2 CONDUIT HYDRAULICS

In general, each of the outlet conduits operate under inlet control for the lower discharges. As the discharge increases, the hydraulic control shifts to outlet or pressure flow due to increasing friction losses within the conduit downstream of the inlet.

The Deer Valley Detention Basin outlet conduit is unique in the fact that the hydraulic capacity is potentially impacted by tributary flows draining to junctions downstream of the basin. Deer Valley Detention Basin outlet conduit intercepts flows draining from DC Ranch at concentration point C52A (intersection of Pima Road and Thompson Peak Parkway) in a junction structure. That junction is designed such that the incoming flows to the system from DC Ranch do not impact the hydraulics of the conduit upstream from that junction.

4.0 Watershed Model Results

Three (3) separate HEC-1 models are developed for hydrologic analyses of the PR3B system. Table 4-1 provides a listing and brief summary of each HEC-1 model developed. The Appendix containing the summary output from HEC-1 is shown in parenthesis at the end of each summary.

TABLE 4-1

Summary of HEC-1 models

HEC-1 Model	Summary Description
ULTMT-6.*	100-year, 6-hour model of entire watershed assuming future condition, full build-out. Flow splits are modeled per rating analysis presented in Concept Hydrology Report. Primarily provides design discharges for system upstream of the Outer Loop Basin. (Appendix E)

ULTMT-24.*	100-year, 24-hour model of entire watershed assuming future condition, full build-out. 100% of flow splits are assumed to be directed to the Deer Valley Basin. Primarily provides design discharges for the Outer Loop Basin and outlet conduit. Also used to evaluate performance of the Deer Valley Detention Basin emergency spillway for the worst case scenario. (Appendix F)
HAPPY-24.*	Worst case 100-year, 24-hour model assuming 100% of flow splits are routed to the Happy Valley Basin. Used to evaluate performance of the Happy Valley Detention Basin emergency spillway for worst case scenario. (Appendix G)

Digital input and output files for each of the models summarized in Table 4-1 are provided in Appendix H.

Table 4-2 summarizes the ultimate condition design peak discharges for key locations and subbasins within the PR3B watershed. The design peak discharges are also shown on Plate 1. Column 1 lists the HEC-1 operation identifier as found in the HEC-1 output. Column 2 lists the design peak 100-year discharge and the corresponding design storm duration is listed in column 3.

TABLE 4-2

Summary of ultimate condition 100-year peak design discharges

HEC-1 Model Operation Identifier	Peak 100-Year Design Discharge	Design Storm Duration
	cfs	cfs
(1)	(2)	(3)
S30N	1,227	6-Hour
C31.1	1,508	6-Hour
C34.2	2,177	6-Hour
C34.1	1,896	6-Hour
HVDB-I	4,015	6-Hour
HVDB-O	142	6-Hour
C36.1	250	6-Hour
C36R1A	1,236	6-Hour
C36R1B	1,811	6-Hour

TABLE 4-2

Summary of ultimate condition 100-year peak design discharges

HEC-1 Model Operation Identifier (1)	Peak 100-Year Design Discharge cfs (2)	Design Storm Duration cfs (3)
C36R2A	1,869	6-Hour
C36R2B	2,025	6-Hour
S51.1	1,058	6-Hour
DVDB-I	2,973	6-Hour
DVDB-O	261	6-Hour
C52A	411	6-Hour
C52	2,251	6-Hour
CPC5	1,242	6-Hour
CN5D	1,459	24-Hour
C53	2,377	6-Hour
C53A1	2,792	6-Hour
C53A	2,871	6-Hour
SCN6D	73	24-Hour
SCN6C	363	24-Hour
SCN5C	297	24-Hour
SCNA1	175	24-Hour
CA2	392	24-Hour
SCNA3	272	24-Hour
SCNA4	221	24-Hour
OLDB-I	6,460	24-Hour
OLDB-O	1,985	24-Hour

5.0 PR3B Detention Basin Performance

The basins and outlets are sized to evacuate the floodwaters within 36 hours after the end of the design. Happy Valley and Deer Valley Detention Basins are sized such that the spillways do not operate for the 6-hour storm. Those basins are also checked for performance during a 100-year, 24-hour storm with an assumption that upstream flow splits direct 100 percent of the runoff to that basin. This checking presents the most severe reasonable conditions for the two basins.

The Outer Loop Basin is designed for the 100-year, 24-hour storm in order to satisfy ADOT drainage requirements. No elevated berm or spillway is designed for this basin. Runoff from a storm of larger magnitude than the design storm will spill overland to the south at natural grade.

Table 5-1 summarizes the physical characteristics of each detention basin.. Table 5-2 summarizes the operational performance of each basin for both the 6- and 24-hour storms.

TABLE 5-1

Summary detention basin characteristics

Detention Basin	Minimum Elevation	Emergency Spillway Elevation	Top of Embankment (Overtopping)	Outlet Conduit Diameter	Storage Volume to Emergency Spillway Crest	Storage Volume to Top of Embankment
	feet	feet	feet	inches	acre-feet	acre-feet
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Happy Valley	2,065.0	2,089.5	2,090.0	42	216.9	240.0
Deer Valley	1,855.0	1,879.5	1,880.0	54	203.2	224.1
Outer Loop	1,590.0	---	1,609.0	(2) - 108	---	263.9

TABLE 5-2

Summary detention basin operations for the 100-year, 6- and 24-hour storms

	Peak Inflow Discharge		Max. Stage Elevation		Max. Storage Volume		Peak Outflow Discharge	
Detention Basin	6-hour	24-hour	6-hour	24-hour	6-hour	24-hour	6-hour	24-hour
	cfs	cfs	feet	feet	acre-feet	acre-feet	cfs	cfs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Happy Valley	4,015	4,742	2,089.0	2,090.5	211.8	231.1	142	680
Deer Valley	2,973	4,131	1,877.8	1,880.6	180.9	218.3	261	880
Outer Loop	---	6,460	---	1,607.8	---	234.0	---	1,985

6.0 Summary

The 10% design of PR3B facilities requires refinement and/or revisions to the Concept Hydrology Report watershed modeling. Those changes are needed to provide additional discharge estimates at specified locations and reflect the proposed PR3B improvements.

Modifications to the three detention basins and their respective outlet conduits have resulted in minor changes to the overall hydrology as compared to the Concept Hydrology Report results. The Happy Valley and Deer Valley Detention Basins are slightly larger and provide more available storage than what is presented previously and are designed to detain the 100-year, 6-hour runoff without operation of the emergency spillway. The 100-year, 6-hour peak discharges from HVDB and DVDB are reduced from 219 and 360 cfs to 142 and 261 cfs, respectively. The 100-year, 24-hour peak spillway discharge from HVDB is reduced from 1,275 cfs to 540 cfs and the DVDB 100-year, 24-hour peak discharge is increased from 550 cfs to 620 cfs. During the 100-year, 24-hour storm, the emergency spillways at HVDB and DVDB will operate for approximately 5 and 6 hours, respectively.

The Outer Loop Basin is no longer designed to store runoff above grade. The design storm for the basin is also changed from the 100-year, 6-hour to the 100-year, 24-hour event. The 100-year, 24-hour peak discharge from the basin outlet is increased from 1,296 to 1,985 cfs.

APPENDIX A

Subbasin Input Parameter Summary Table

Table A-1

Subbasin input parameters for the Pima Road Three Basin design hydrology
Future full build-out conditions (ultimate)

Subbasin	Drainage	Rainfall Losses		Overland Flow Element				Collector Channel Element							Main Channel Element					
ID	Area	Curve No.	RTIMP	Length	Slope	n	% Contributing	Length	Slope	n	Contrib. Area	Shape	Bottom Width	Side Slopes	Length	Slope	n	Shape	Bottom Width	Side Slopes
	sq. mi.		%	feet	ft/ft			feet	ft/ft		sm				feet	ft/ft				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
S30N	0.6518	82.0	13	300	0.350	0.13	20	1550	0.069	0.045	0.0096	TRAP	0	12	10520	0.038	0.040	TRAP	15	15
		82.0	13	300	0.050	0.13	80													
S31.1	0.2663	76.6	13	300	0.567	0.13	10	1950	0.056	0.045	0.0147	TRAP	0	10	7600	0.035	0.040	TRAP	22	8
		76.6	13	300	0.050	0.13	90													
S34.2	0.4441	77.3	12	50	0.100	0.13	10	2200	0.045	0.045	0.0538	TRAP	0	10	8150	0.039	0.045	TRAP	0	10
		77.3	12	300	0.040	0.13	90													
S35N	0.5482	82.0	13	300	0.491	0.13	15	2700	0.079	0.045	0.0242	TRAP	3	6	5050	0.028	0.040	TRAP	15	15
		82.0	13	300	0.113	0.13	85													
S36.2	0.2087	76.6	13	300	0.580	0.13	5	1800	0.036	0.045	0.0145	TRAP	10	10	3520	0.028	0.040	TRAP	20	6
		76.6	13	300	0.100	0.13	95													
S34.1	1.1635	77.3	12	300	0.590	0.13	25	2570	0.085	0.045	0.0214	TRAP	0	10	8800	0.033	0.040	TRAP	20	10
		77.3	12	300	0.040	0.13	75													
S36.1	0.1394	73.4	11	300	0.042	0.13	100	2330	0.032	0.045	0.0134	TRAP	10	30	3200	0.027	0.040	TRAP	20	30
S36R1A	0.6310	74.3	10	300	0.020	0.13	100	1420	0.032	0.045	0.0061	TRAP	0	13	10800	0.033	0.040	TRAP	10	9
S36R1B	0.0586	74.3	10	300	0.020	0.13	100	1420	0.032	0.045	0.0061	TRAP	0	13	8500	0.033	0.040	TRAP	10	9
S36R2A	0.1325	72.0	20	100	0.045	0.13	100	1900	0.032	0.017	0.0150	TRAP	15	7	800	0.030	0.040	TRAP	30	10
S36R2B	0.2417	72.0	12	280	0.045	0.10	100	1900	0.032	0.017	0.0150	TRAP	15	7	7360	0.030	0.040	TRAP	30	10
S51.1	1.1300	73.9	12	300	0.037	0.13	100	1800	0.038	0.045	0.0161	TRAP	0	12	14400	0.032	0.040	TRAP	40	15
								*** BEGIN DC RANCH WATERSHED ***												
52D4	0.0700	75	14.5	120	0.01	0.15	100	---	---	---	---	---	---	---	3100	0.035	0.045	TRAP	30	10
52D4B	0.0220	75	63	120	0.01	0.15	100	---	---	---	---	---	---	---	2200	0.033	0.045	TRAP	30	10
52D5A	0.0232	75	63	120	0.01	0.15	100	---	---	---	---	---	---	---	1300	0.032	0.045	TRAP	30	10
52C3	0.0060	75	65	100	0.02	0.1	100	---	---	---	---	---	---	---	800	0.033	0.045	TRAP	30	10
52C3B	0.0160	75	60	100	0.02	0.1	100	---	---	---	---	---	---	---	1400	0.034	0.045	TRAP	30	10
51C	0.0972	74	15	100	0.0213	0.1	100	---	---	---	---	---	---	---	3900	0.0375	0.045	TRAP	30	10
52C1	0.0290	75	20.5	100	0.02	0.1	100	---	---	---	---	---	---	---	1350	0.021	0.045	TRAP	30	10
52C2A	0.0190	75	2	100	0.02	0.1	100	---	---	---	---	---	---	---	1500	0.033	0.045	TRAP	30	10
52C2B	0.0275	75	11	100	0.02	0.1	100	---	---	---	---	---	---	---	2000	0.03	0.045	TRAP	30	10
52C2C	0.0140	75	62	100	0.02	0.1	100	---	---	---	---	---	---	---	1500	0.04	0.045	TRAP	30	10
52C4	0.0170	75	60	100	0.02	0.1	100	---	---	---	---	---	---	---	1550	0.03	0.045	TRAP	30	10
52C13	0.0230	75	31	100	0.02	0.1	100	---	---	---	---	---	---	---	950	0.04	0.045	TRAP	30	10
52C15	0.0460	75	64.4	100	0.02	0.1	100	---	---	---	---	---	---	---	2050	0.036	0.045	TRAP	30	10
52C14A	0.0410	75	67.7	100	0.02	0.1	100	---	---	---	---	---	---	---	2050	0.031	0.045	TRAP	30	10
52C5	0.0160	75	27	100	0.02	0.1	100	---	---	---	---	---	---	---	1200	0.03	0.045	TRAP	30	10
52C6	0.0360	75	31.4	100	0.02	0.1	100	---	---	---	---	---	---	---	3100	0.035	0.045	TRAP	30	10
51B	0.5711	71.9	13.1	100	0.0213	0.1	100	---	---	---	---	---	---	---	8900	0.03	0.045	TRAP	50	25
52C7	0.0060	75	27	100	0.02	0.1	100	---	---	---	---	---	---	---	550	0.04	0.045	TRAP	30	10
52C8	0.0080	75	27	100	0.02	0.1	100	---	---	---	---	---	---	---	750	0.034	0.045	TRAP	30	10
52C9	0.0690	75	31.85	100	0.02	0.1	100	---	---	---	---	---	---	---	3150	0.036	0.045	TRAP	30	10
52C10	0.0140	75	7.85	100	0.02	0.1	100	---	---	---	---	---	---	---	800	0.032	0.045	TRAP	30	10
52C11	0.0425	75	27	100	0.02	0.1	100	---	---	---	---	---	---	---	2800	0.031	0.045	TRAP	30	10
52C12	0.0230	75	85	100	0.02	0.1	100	---	---	---	---	---	---	---	900	0.03	0.045	TRAP	30	10
52C14B	0.0210	75	60	100	0.02	0.1	100	---	---	---	---	---	---	---	1250	0.029	0.045	TRAP	30	10
52B1	0.0030	75	27	100	0.02	0.1	100	---	---	---	---	---	---	---	600	0.039	0.045	TRAP	30	10
52B2	0.0320	75	17	100	0.02	0.1	100	---	---	---	---	---	---	---	2350	0.037	0.045	TRAP	30	10
52B3	0.0620	75	31.8	100	0.02	0.1	100	---	---	---	---	---	---	---	3450	0.03	0.045	TRAP	30	10
52B4	0.0260	75	62	100	0.02	0.1	100	---	---	---	---	---	---	---	1700	0.024	0.045	TRAP	30	10
52B5	0.0210	75	56.9	100	0.02	0.1	100	---	---	---	---	---	---	---	1400	0.03	0.045	TRAP	30	10
52B6	0.0960	75	13.55	100	0.02	0.1	100	---	---	---	---	---	---	---	3200	0.033	0.045	TRAP	30	10
52B7	0.0800	75	78.45	100	0.02	0.1	100	---	---	---	---	---	---	---	2750	0.028	0.045	TRAP	30	10

Table A-1

Subbasin input parameters for the Pima Road Three Basin design hydrology
Future full build-out conditions (ultimate)

Subbasin	Drainage	Rainfall Losses		Overland Flow Element				Collector Channel Element							Main Channel Element					
ID	Area	Curve No.	RTIMP	Length	Slope	n	% Contributing	Length	Slope	n	Contrib. Area	Shape	Bottom Width	Side Slopes	Length	Slope	n	Shape	Bottom Width	Side Slopes
	sq. mi.		%	feet	ft/ft			feet	ft/ft		sm				feet	ft/ft				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
52A2	0.0650	75	88.8	100	0.02	0.1	100	---	---	---	---	---	---	---	2900	0.023	0.045	TRAP	30	10
52A1	0.1300	75	32.25	100	0.02	0.1	100	---	---	---	---	---	---	---	3400	0.033	0.045	TRAP	30	10
*** END DC RANCH WATERSHED ***																				
*** BEGIN GRAYHAWK WATERSHED ***																				
37A	0.6765	74	24.8	61	0.0213	0.1	100	---	---	---	---	---	---	---	4800	0.0237	0.045	TRAP	50	130
SUB5N	0.0290	77	18	100	0.013	0.15	100	1000	0.005	0.018	0.015	TRAP	50	20	500	0.015	0.025	TRAP	10	4
SUB6B	0.0320	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	1300	0.015	0.025	TRAP	10	4
SUB1N	0.0190	77	18	100	0.013	0.15	100	---	---	---	---	---	---	---	1470	0.0204	0.018	TRAP	50	20
SUB2NA	0.0150	81	0	150	0.013	0.15	100	---	---	---	---	---	---	---	1050	0.0215	0.025	TRAP	20	6
SUB2NB	0.0300	77	53	150	0.013	0.15	100	---	---	---	---	---	---	---	1200	0.015	0.025	TRAP	20	50
SUB6N	0.0490	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	1300	0.015	0.025	TRAP	10	4
SUB3N	0.0270	81	0	100	0.02	0.15	100	---	---	---	---	---	---	---	2800	0.0207	0.025	TRAP	10	4
SUB4N	0.0320	77	18	100	0.015	0.15	100	---	---	---	---	---	---	---	1200	0.007	0.018	TRAP	50	20
SUB6A	0.0130	83	68	100	0.015	0.12	100	---	---	---	---	---	---	---	800	0.01	0.025	TRAP	2	3
SUB3C	0.0104	77	68	100	0.025	0.02	100	---	---	---	---	---	---	---	600	0.015	0.035	TRAP	50	20
GC1018	0.0440	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	1800	0.0233	0.025	TRAP	10	4
GC1-9	0.0260	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	2110	0.022	0.025	TRAP	10	4
SUB3S	0.0102	77	53	100	0.01	0.15	100	---	---	---	---	---	---	---	930	0.016	0.025	TRAP	50	20
SUB4S	0.0273	77	53	100	0.01	0.15	100	---	---	---	---	---	---	---	1780	0.018	0.015	TRAP	50	20
GC2-8	0.0140	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	980	0.016	0.025	TRAP	10	4
SUB3D3	0.0140	81	0	50	0.015	0.1	100	---	---	---	---	---	---	---	2450	0.016	0.025	TRAP	5	4
GC7	0.0134	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	1380	0.02	0.025	TRAP	10	4
SUB3D1	0.0088	77	34	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
SUB3B1	0.0137	77	47	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
SUB3F	0.0344	77	68	100	0.025	0.15	100	---	---	---	---	---	---	---	1000	0.015	0.025	TRAP	100	20
SUB3B2	0.0246	77	40	SCS dimensionless hydrograph with a lag time of 0.10 hrs.																
SUB3E1	0.0246	77	40	SCS dimensionless hydrograph with a lag time of 0.10 hrs.																
SUB3D2	0.0220	77	35	SCS dimensionless hydrograph with a lag time of 0.08 hrs.																
SUB3E2	0.0120	77	35	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
PC3*	0.0434	77	10	100	0.015	0.15	100	---	---	---	---	---	---	---	2200	0.01	0.03	TRAP	30	4
SUB3E3	0.0200	77	32	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
PC4*	0.0217	77	0	100	0.015	0.15	100	---	---	---	---	---	---	---	1100	0.01	0.03	TRAP	30	4
SUB13N	0.0370	77	24	100	0.015	0.15	100	---	---	---	---	---	---	---	2400	0.007	0.018	TRAP	50	20
SUB14N	0.0490	81	0	300	0.025	0.15	100	---	---	---	---	---	---	---	2300	0.01	0.025	TRAP	10	4
SUB20N	0.0240	77	24	200	0.01	0.15	100	---	---	---	---	---	---	---	1400	0.02	0.018	TRAP	50	20
SUB19N	0.0380	77	31	150	0.01	0.15	100	---	---	---	---	---	---	---	1800	0.015	0.018	TRAP	50	20
UB18NC	0.0210	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	1550	0.02	0.018	TRAP	50	20
UB18NA	0.0220	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	1450	0.02	0.018	TRAP	50	20
UB18NB	0.0096	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	800	0.02	0.018	TRAP	50	20
PC1	0.0620	77	10	500	0.015	0.15	100	---	---	---	---	---	---	---	2700	0.01	0.03	TRAP	30	4
UB16NA	0.0139	77	42	100	0.015	0.15	100	---	---	---	---	---	---	---	1500	0.015	0.022	TRAP	50	20
UB16NB	0.0156	77	42	100	0.015	0.15	100	---	---	---	---	---	---	---	1500	0.015	0.022	TRAP	50	20
SUB7N	0.0310	77	18	100	0.015	0.15	100	---	---	---	---	---	---	---	1900	0.01	0.018	TRAP	50	20
SUB8NA	0.0046	81	0	100	0.03	0.15	100	---	---	---	---	---	---	---	450	0.03	0.025	TRAP	20	6
SUB8NB	0.0142	81	0	100	0.03	0.15	100	---	---	---	---	---	---	---	1150	0.025	0.025	TRAP	20	6
SUB8NC	0.0182	81	0	100	0.03	0.15	100	---	---	---	---	---	---	---	900	0.03	0.025	TRAP	20	6
SUB9N	0.0550	77	28	100	0.008	0.15	100	---	---	---	---	---	---	---	1700	0.01	0.018	TRAP	50	20
SUB10B	0.0280	77	42	100	0.015	0.15	100	350	0.008	0.018	0	TRAP	50	20	600	0.008	0.025	TRAP	10	4
UB11NA	0.0076	81	0	100	0.025	0.15	100	---	---	---	---	---	---	---	500	0.03	0.025	TRAP	30	6
UB11NB	0.0078	81	0	100	0.04	0.15	100	---	---	---	---	---	---	---	700	0.025	0.025	TRAP	30	6

Table A-1

Subbasin input parameters for the Pima Road Three Basin design hydrology
Future full build-out conditions (ultimate)

Subbasin	Drainage	Rainfall Losses		Overland Flow Element				Collector Channel Element							Main Channel Element					
ID	Area	Curve No.	RTIMP	Length	Slope	n	% Contributing	Length	Slope	n	Contrib. Area	Shape	Bottom Width	Side Slopes	Length	Slope	n	Shape	Bottom Width	Side Slopes
	sq. mi.		%	feet	ft/ft			feet	ft/ft		sm				feet	ft/ft				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
UB11NC	0.0069	81	0	100	0.03	0.15	100	---	---	---	---	---	---	---	650	0.028	0.025	TRAP	20	5
SUB10A	0.0300	77	42	100	0.015	0.15	100	350	0.008	0.018	0	TRAP	50	20	800	0.008	0.025	TRAP	10	4
UB12NA	0.0153	81	0	150	0.025	0.15	100	---	---	---	---	---	---	---	650	0.017	0.025	TRAP	30	6
UB12NB	0.0157	81	0	150	0.025	0.15	100	---	---	---	---	---	---	---	650	0.017	0.025	TRAP	30	6
UB16NC	0.0337	77	42	100	0.015	0.15	100	---	---	---	---	---	---	---	1600	0.015	0.022	TRAP	50	20
PC2	0.0540	77	10	100	0.015	0.15	100	---	---	---	---	---	---	---	2700	0.01	0.03	TRAP	50	4
UB17NA	0.0098	81	0	150	0.025	0.05	100	---	---	---	---	---	---	---	960	0.0292	0.025	TRAP	30	50
UB17NB	0.0111	81	0	150	0.025	0.05	100	---	---	---	---	---	---	---	1200	0.0217	0.025	TRAP	30	50
SUB17A	0.0079	77	34	75	0.03	0.05	100	---	---	---	---	---	---	---	1500	0.02	0.025	TRAP	8	4
UB17NC	0.0056	77	12	75	0.03	0.05	100	---	---	---	---	---	---	---	910	0.0187	0.025	TRAP	8	4
SUB15N	0.0391	77	68	100	0.01	0.15	100	400	0.008	0.018	0	TRAP	50	20	1700	0.015	0.025	TRAP	10	4
SUB1-2	0.0558	77	68	200	0.01	0.15	100	---	---	---	---	---	---	---	1370	0.027	0.015	TRAP	50	20
SUB5S	0.0263	77	31	100	0.01	0.15	100	---	---	---	---	---	---	---	1280	0.007	0.015	TRAP	50	20
GC1216	0.0365	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	2200	0.024	0.025	TRAP	10	4
GC1415	0.0450	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	1300	0.022	0.025	TRAP	10	4
SUB6S	0.0210	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	2150	0.013	0.025	TRAP	50	20
SUB7S	0.0270	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	2080	0.023	0.025	TRAP	50	20
SUB8S	0.0256	77	42	100	0.01	0.15	100	---	---	---	---	---	---	---	1600	0.015	0.025	TRAP	50	20
GC36	0.0406	81	0	200	0.025	0.15	100	---	---	---	---	---	---	---	2350	0.015	0.035	TRAP	10	4
SUB9S	0.0210	77	53	100	0.01	0.15	100	---	---	---	---	---	---	---	1100	0.013	0.025	TRAP	50	20
SUB7A	0.0092	77	42	100	0.025	0.15	100	---	---	---	---	---	---	---	950	0.015	0.025	TRAP	50	20
SUB10S	0.0248	77	53	100	0.01	0.15	100	---	---	---	---	---	---	---	1150	0.02	0.025	TRAP	50	20
SUB11S	0.0234	77	68	100	0.015	0.018	100	---	---	---	---	---	---	---	1050	0.015	0.025	TRAP	100	20
GC45	0.0127	81	0	200	0.015	0.025	100	---	---	---	---	---	---	---	550	0.015	0.035	TRAP	10	4
PC5*	0.0370	77	0	100	0.015	0.15	100	---	---	---	---	---	---	---	1900	0.01	0.03	TRAP	30	4
								*** END GRAYHAWK WATERSHED ***												
SCN5D	0.0499	74	0	100	0.025	0.13	100	---	---	---	---	---	---	---	3100	0.017	0.04	TRAP	0	15
S53A	0.1794	74	11	300	0.022	0.13	100	1475	0.026	0.045	0.0111	TRAP	3	5	1750	0.021	0.040	TRAP	25	5
S53A1	0.3376	74	12	300	0.022	0.13	70	1250	0.023	0.045	0.0087	TRAP	4	5	5050	0.017	0.040	TRAP	35	5
		74	30	150	0.027	0.10	30													
SCN6B	0.0520	74	80	150	0.010	0.15	70	720	0.020	0.030	0.0084	TRAP	5	10	440	0.009	0.035	TRAP	6	3
		74	0	100	0.025	0.13	30	700	0.010	0.040	0.0050	TRAP	0	10						
SCN6D	0.0369	74	3	100	0.025	0.13	100	---	---	---	---	---	---	---	100	0.017	0.040	TRAP	0	15
SCN6C	0.1388	74	80	150	0.010	0.15	50	1500	0.01	0.03	0.123	TRAP	5	10	700	0.017	0.040	TRAP	0	15
		74	0	100	0.025	0.13	50													
SCN5C	0.1904	74	0	150	0.02	0.13	100	---	---	---	---	---	---	---	3700	0.0176	0.04	TRAP	0	15
SCN6E	0.0427	74	5	50	0.01	0.13	100	---	---	---	---	---	---	---	3200	0.02	0.025	TRAP	0	50
SCNA1	0.1099	77	0	300	0.015	0.13	100	---	---	---	---	---	---	---	1900	0.015	0.04	TRAP	0	20
								*** BEGIN GRAYHAWK WATERSHED ***												
1G	0.0590	74	53	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
1I	0.0620	74	52	SCS dimensionless hydrograph with a lag time of 0.07 hrs.																
1J	0.0175	74	64	SCS dimensionless hydrograph with a lag time of 0.06 hrs.																
1L	0.0484	74	64	SCS dimensionless hydrograph with a lag time of 0.217 hrs.																
								*** END GRAYHAWK WATERSHED ***												
SCNA2	0.1859	74	0	250	0.0167	0.13	100	---	---	---	---	---	---	---	3900	0.0167	0.04	TRAP	0	15
SCNA3	0.2027	74	0	300	0.0179	0.13	100	---	---	---	---	---	---	---	5300	0.0179	0.04	TRAP	0	20
SCNA4	0.1459	77	0	200	0.015	0.13	100	---	---	---	---	---	---	---	4500	0.0181	0.04	TRAP	0	15
SCNA5	0.0678	77	5	50	0.01	0.13	100	---	---	---	---	---	---	---	5000	0.002	0.025	TRAP	0	50

note *: Subbasins added by GVSCE in order to bring flow previously released to natural channels together, routing the hydrographs down to the Outer Loop Detention Basin

APPENDIX B

Happy Valley Detention Basin Stage/Storage/Discharge Relations
and
Supporting Technical Calculations and Output

Table B-1

HY8 Inlet Control 42" rcp			StormCad Hydraulic Gradeline 42" rcp		Interplated Values		
Discharge cfs	Depth feet	Stage feet	Discharge cfs	Stage feet	Discharge cfs	HY8 Stage feet	Winstorm Stage feet
0	0	2065	0	2065	0	2065.00	2065
25	2.21	2067.2	10	2066.13	10	2065.88	2066.13
50	3.42	2068.4	20	2066.63	20	2066.77	2066.63
75	4.75	2069.8	30	2067.04	30	2067.45	2067.04
100	6.6	2071.6	40	2067.41	40	2067.94	2067.41
125	9.03	2074	50	2067.79	50	2068.42	2067.79
150	12	2077	60	2068.23	60	2068.95	2068.23
			70	2070.44	70	2069.48	2070.44
			80	2072.26	80	2070.12	2072.26
			90	2074.32	90	2070.86	2074.32
			100	2076.62	100	2071.60	2076.62
			110	2079.16	110	2072.57	2079.16
			120	2081.95	120	2073.54	2081.95
			130	2084.98	130	2074.62	2084.98
			140	2088.25	140	2075.81	2088.25
			150	2091.77	150	2077.00	2091.77

Happy Valley Detention Basin
Rating Cuves for the
100-year, 6-hour storm

Stage feet	Volume acre-feet	Discharge cfs
2065.00	0	0
2066.00	0.2	9
2066.13	0.3	10
2066.77	0.6	20
2067.00	0.7	23
2067.45	1.2	30
2067.94	1.7	40
2068.00	1.8	41
2068.42	2.5	50
2068.95	3.3	60
2069.00	3.4	60
2070.00	5.4	67
2070.44	8.1	70
2072.26	19.4	80
2074.32	32.1	90
2075.00	36.3	93
2076.62	53.1	100
2079.16	79.4	110
2080.00	88.1	113
2081.95	112.3	120
2084.98	150.0	130
2085.00	150.2	130
2088.25	198.4	140
2090.00	224.3	145
2091.00	240.0	148
2091.77	---	150

Table B-2

HY8 Inlet Control 42" rcp			Winstorm Hydraulic Gradeline 42" rcp		Interplated Values			Weir flow	
Discharge cfs	Depth feet	Stage feet	Discharge cfs	Stage feet	Discharge cfs	HY8 Stage feet	Winstorm Stage feet	Discharge cfs	Stage feet
0	0	2065	0	2065	0	2065.00	2065	0	2089.5
25	2.21	2067.2	10	2066.13	10	2065.88	2066.13	15.9	2089.6
50	3.42	2068.4	20	2066.63	20	2066.77	2066.63	45.4	2089.7
75	4.75	2069.8	30	2067.04	30	2067.45	2067.04	83.9	2089.8
100	6.6	2071.6	40	2067.41	40	2067.94	2067.41	130.1	2089.9
125	9.03	2074	50	2067.79	50	2068.42	2067.79	183	2090
150	12	2077	60	2068.23	60	2068.95	2068.23	242.1	2090.1
			70	2070.44	70	2069.48	2070.44	307.1	2090.2
			80	2072.26	80	2070.12	2072.26	377.5	2090.3
			90	2074.32	90	2070.86	2074.32	453.3	2090.4
			100	2076.62	100	2071.60	2076.62	534.3	2090.5
			110	2079.16	110	2072.57	2079.16	620.3	2090.6
			120	2081.95	120	2073.54	2081.95	711.2	2090.7
			130	2084.98	130	2074.62	2084.98	806.9	2090.8
			140	2088.25	140	2075.81	2088.25	907.3	2090.9
			150	2091.77	150	2077.00	2091.77	1012.4	2091

		Volume		
Stage feet	Area acres	Incr. acre-feet	Sed. acre-feet	Accum. acre-feet
2065	0.0	---	---	0
2066	0.3	0.2	0	0.2
2067	0.8	0.6	0	0.7
2068	1.4	1.1	0	1.8
2069	2.0	1.7	0	3.4
2070	4.2	3.0	1	5.4
2075	10.2	34.9	4	36.3
2080	12.1	55.7	4	88.1
2085	14.0	65.1	3	150.2
2090	15.7	74.1	0	224.3
2091	15.7	15.7	0	240.0

Happy Valley Detention Basin
Rating Cuves for the
100-year, 24-hour storm

		Discharge		
Stage feet	Volume acre-feet	Pipe cfs	Weir cfs	Total cfs
2065.00	0	0.00	0	0
2066.00	0.2	8.85	0	9
2066.13	0.3	10.00	0	10
2066.77	0.6	20.00	0	20
2067.00	0.7	23.39	0	23
2067.45	1.2	30.00	0	30
2067.94	1.7	40.00	0	40
2068.00	1.8	41.32	0	41
2068.42	2.5	50.00	0	50
2068.95	3.3	60.00	0	60
2069.00	3.4	60.32	0	60
2070.00	5.4	67.04	0	67
2070.44	8.1	70.00	0	70
2072.26	19.4	80.00	0	80
2074.32	32.1	90.00	0	90
2075.00	36.3	92.96	0	93
2076.62	53.1	100.00	0	100
2079.16	79.4	110.00	0	110
2080.00	88.1	113.01	0	113
2081.95	112.3	120.00	0	120
2084.98	150.0	130.00	0	130
2085.00	150.2	130.06	0	130
2088.25	198.4	140.00	0	140
2089.50	216.9	143.55	0	144
2089.60	218.4	143.84	16	160
2089.70	219.9	144.12	45	190
2089.80	221.3	144.40	84	228
2089.90	222.8	144.69	130	275
2090.00	224.3	144.97	183	328
2090.10	225.9	145.26	242	387
2090.20	227.4	145.54	307	453
2090.30	229.0	145.82	378	523
2090.40	230.6	146.11	453	599
2090.50	232.2	146.39	534	681
2090.60	233.7	146.68	620	767
2090.70	235.3	146.96	711	858
2090.80	236.9	147.24	807	954
2090.90	238.4	147.53	907	1055
2091.00	240.0	147.81	1012	1160

CURRENT DATE: 08-06-1997 FILE DATE: 08-06-1997
CURRENT TIME: 11:44:21 FILE NAME: HV-42

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	2065.00	2061.00	800.01	1 RCP	3.50	3.50	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: HV-42 DATE: 08-06-1997

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
2065.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2067.21	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2068.42	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2069.75	75.0	75.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2073.32	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2078.86	125.0	125.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2085.23	150.0	150.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2092.71	175.0	175.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2101.35	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2111.14	225.0	225.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2122.08	250.0	250.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2150.00	304.6	304.6	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: HV-42 DATE: 08-06-1997

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
2065.00	0.000	0.00	0.00	0.00
2067.21	0.000	25.00	0.00	0.00
2068.42	0.000	50.00	0.00	0.00
2069.75	0.000	75.00	0.00	0.00
2073.32	0.000	100.00	0.00	0.00
2078.86	0.000	125.00	0.00	0.00
2085.23	0.000	150.00	0.00	0.00
2092.71	0.000	175.00	0.00	0.00
2101.35	0.000	200.00	0.00	0.00
2111.14	0.000	225.00	0.00	0.00
2122.08	0.000	250.00	0.00	0.00

****

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

****

CURRENT DATE: 08-06-1997 FILE DATE: 08-06-1997
CURRENT TIME: 11:44:21 FILE NAME: HV-42

PERFORMANCE CURVE FOR CULVERT 1 - 1(3.50 (ft) BY 3.50 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	2065.00	0.00	-4.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
25.00	2067.21	2.21	-0.91	1-S2n	1.37	1.53	1.23	0.94	8.26	0.00
50.00	2068.42	3.42	1.15	1-S2n	2.05	2.20	2.04	1.35	8.58	0.00
75.00	2069.75	4.75	4.72	2-M2c	2.78	2.70	2.70	1.66	9.43	0.00
100.00	2073.32	6.60	8.32	2-M2c	3.50	3.05	3.05	1.91	11.27	0.00
125.00	2078.86	9.03	13.86	2-M2c	3.50	3.37	3.37	2.13	13.25	0.00
150.00	2085.23	12.00	20.23	6-FFc	3.50	3.50	3.50	2.33	15.59	0.00
175.00	2092.71	15.47	27.71	6-FFc	3.50	3.50	3.50	2.51	18.19	0.00
200.00	2101.35	19.60	36.35	6-FFc	3.50	3.50	3.50	2.67	20.79	0.00
225.00	2111.14	24.90	46.14	6-FFc	3.50	3.50	3.50	2.82	23.39	0.00
250.00	2122.08	32.39	57.08	6-FFc	3.50	3.50	3.50	2.97	25.98	0.00

El. inlet face invert 2065.00 ft El. outlet invert 2061.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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

INLET STATION	0.00 ft
INLET ELEVATION	2065.00 ft
OUTLET STATION	800.00 ft
OUTLET ELEVATION	2061.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0050
CULVERT LENGTH ALONG SLOPE	800.01 ft

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

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	3.50 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 08-06-1997 FILE DATE: 08-06-1997
CURRENT TIME: 11:44:21 FILE NAME: HV-42

****
********** TAILWATER **********
****
****

TAILWATER RATING CURVE

FLOW (cfs)	W.S.E.(ft)	DEPTH (ft)
0	2061.00	0.00
25	2061.94	0.94
50	2062.35	1.35
75	2062.66	1.66
100	2062.91	1.91
125	2063.13	2.13
150	2063.33	2.33
175	2063.51	2.51
200	2063.67	2.67
225	2063.82	2.82
250	2063.97	2.97

****

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	1.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	2150.00 ft

****

Table B-3

Happy valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
I-1	10	2,090.00	2,060.00	2,066.13	2,065.96
J-1	10	2,078.00	2,060.00	2,064.11	2,063.96
Outlet	10	2,071.00	2,060.00	2,061.95	2,061.95
I-1	20	2,090.00	2,060.00	2,066.63	2,066.37
J-1	20	2,078.00	2,060.00	2,064.60	2,064.37
Outlet	20	2,071.00	2,060.00	2,062.37	2,062.37
I-1	30	2,090.00	2,060.00	2,067.04	2,066.72
J-1	30	2,078.00	2,060.00	2,065.01	2,064.72
Outlet	30	2,071.00	2,060.00	2,062.72	2,062.72
I-1	40	2,090.00	2,060.00	2,067.41	2,067.05
J-1	40	2,078.00	2,060.00	2,065.38	2,065.05
Outlet	40	2,071.00	2,060.00	2,063.05	2,063.05
I-1	50	2,090.00	2,060.00	2,067.79	2,067.39
J-1	50	2,078.00	2,060.00	2,065.75	2,065.39
Outlet	50	2,071.00	2,060.00	2,063.39	2,063.39
I-1	60	2,090.00	2,060.00	2,068.23	2,067.83
J-1	60	2,078.00	2,060.00	2,066.16	2,065.79
Outlet	60	2,071.00	2,060.00	2,063.79	2,063.79
I-1	70	2,090.00	2,060.00	2,070.44	2,070.03
J-1	70	2,078.00	2,060.00	2,067.45	2,067.08
Outlet	70	2,071.00	2,060.00	2,064.50	2,064.50
I-1	80	2,090.00	2,060.00	2,072.26	2,071.72
J-1	80	2,078.00	2,060.00	2,068.35	2,067.87
Outlet	80	2,071.00	2,060.00	2,064.50	2,064.50
I-1	90	2,090.00	2,060.00	2,074.32	2,073.64
J-1	90	2,078.00	2,060.00	2,069.37	2,068.76
Outlet	90	2,071.00	2,060.00	2,064.50	2,064.50
I-1	100	2,090.00	2,060.00	2,076.62	2,075.78
J-1	100	2,078.00	2,060.00	2,070.52	2,069.76
Outlet	100	2,071.00	2,060.00	2,064.50	2,064.50
I-1	110	2,090.00	2,060.00	2,079.16	2,078.15
J-1	110	2,078.00	2,060.00	2,071.78	2,070.87

Table B-3

Happy valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
Outlet	110	2,071.00	2,060.00	2,064.50	2,064.50
I-1	120	2,090.00	2,060.00	2,081.95	2,080.74
J-1	120	2,078.00	2,060.00	2,073.16	2,072.08
Outlet	120	2,071.00	2,060.00	2,064.50	2,064.50
I-1	130	2,090.00	2,060.00	2,084.98	2,083.56
J-1	130	2,078.00	2,060.00	2,074.67	2,073.39
Outlet	130	2,071.00	2,060.00	2,064.50	2,064.50
I-1	140	2,090.00	2,060.00	2,088.25	2,086.61
J-1	140	2,078.00	2,060.00	2,076.29	2,074.81
Outlet	140	2,071.00	2,060.00	2,064.50	2,064.50
I-1	150	2,095.00	2,060.00	2,091.77	2,089.88
J-1	150	2,085.00	2,060.00	2,078.04	2,076.34
Outlet	150	2,071.00	2,060.00	2,064.50	2,064.50

Table B-4

Happy valley basin outlet conduit pipe report

Pipe	Upstream Node	Downstream Node	Discharge (cfs)	Length (ft)	Shape	Size	Roughness	Upstream Ground Elevation (ft)	Upstream Invert Elevation (ft)	Upstream HGL (ft)	Downstream Ground Elevation (ft)	Downstream Invert Elevation (ft)	Downstream HGL (ft)
P-1	I-1	J-1	10	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,065.96	2,078.00	2,063.00	2,064.11
P-2	J-1	Outlet	10	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,063.96	2,071.00	2,061.00	2,061.95
P-1	I-1	J-1	20	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,066.37	2,078.00	2,063.00	2,064.60
P-2	J-1	Outlet	20	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,064.37	2,071.00	2,061.00	2,062.37
P-1	I-1	J-1	30	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,066.72	2,078.00	2,063.00	2,065.01
P-2	J-1	Outlet	30	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,064.72	2,071.00	2,061.00	2,062.72
P-1	I-1	J-1	40	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,067.05	2,078.00	2,063.00	2,065.38
P-2	J-1	Outlet	40	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,065.05	2,071.00	2,061.00	2,063.05
P-1	I-1	J-1	50	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,067.39	2,078.00	2,063.00	2,065.75
P-2	J-1	Outlet	50	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,065.39	2,071.00	2,061.00	2,063.39
P-1	I-1	J-1	60	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,067.83	2,078.00	2,063.00	2,066.16
P-2	J-1	Outlet	60	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,065.79	2,071.00	2,061.00	2,063.79
P-1	I-1	J-1	70	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,070.03	2,078.00	2,063.00	2,067.45
P-2	J-1	Outlet	70	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,067.08	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	80	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,071.72	2,078.00	2,063.00	2,068.35
P-2	J-1	Outlet	80	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,067.87	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	90	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,073.64	2,078.00	2,063.00	2,069.37
P-2	J-1	Outlet	90	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,068.76	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	100	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,075.78	2,078.00	2,063.00	2,070.52
P-2	J-1	Outlet	100	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,069.76	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	110	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,078.15	2,078.00	2,063.00	2,071.78
P-2	J-1	Outlet	110	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,070.87	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	120	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,080.74	2,078.00	2,063.00	2,073.16
P-2	J-1	Outlet	120	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,072.08	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	130	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,083.56	2,078.00	2,063.00	2,074.67
P-2	J-1	Outlet	130	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,073.39	2,071.00	2,061.00	2,064.50
P-1	I-1	J-1	140	400	Circular	42 inch	0.015	2,090.00	2,065.00	2,086.61	2,078.00	2,063.00	2,076.29
P-2	J-1	Outlet	140	400	Circular	42 inch	0.015	2,078.00	2,063.00	2,074.81	2,071.00	2,061.00	2,064.50

Table B-4

Happy valley basin outlet conduit pipe report

Pipe	Upstream Node	Downstream Node	Discharge (cfs)	Length (ft)	Shape	Size	Roughness	Upstream Ground Elevation (ft)	Upstream Invert Elevation (ft)	Upstream HGL (ft)	Downstream Ground Elevation (ft)	Downstream Invert Elevation (ft)	Downstream HGL (ft)
P-1	I-1	J-1	150	400	Circular	42 inch	0.015	2,095.00	2,065.00	2,089.88	2,085.00	2,063.00	2,078.04
P-2	J-1	Outlet	150	400	Circular	42 inch	0.015	2,085.00	2,063.00	2,076.34	2,071.00	2,061.00	2,064.50

****

UNEVEN WEIR FLOW PROGRAM
FORTRAN VERSION 1.0

****

PROJECT: Pima Road 3 Basins: Happy Valley DB overflow
ENGINEER: mcg
DATE: 7/21/1997
TIME: 15:35.22

INPUT PARAMETERS

STARTING WSEL: 2089.50
MAXIMUM WSEL: 2091.05
STEP SIZE: 0.05
BREADTH OF WEIR: 20.00

****

INPUT ELEVATION/STATION TABLE.
PROJECT: Pima Road 3 Basins: Happy Valley DB overflow
DATE: 7/21/1997
TIME: 15:35.22

****

POINT	ELEVATION	STATION
1	2091	1000
2	2089.5	1000.1
3	2089.5	1200.1
4	2091	1200.2

****

WEIR COEFFICIENT TABLE
PROJECT: Pima Road 3 Basins: Happy Valley DB overflow
DATE: 7/21/1997
TIME: 15:35.22

****

REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0	2.5
2	0.05	2.5083
3	0.1	2.5167
4	0.15	2.525
5	0.2	2.5333
6	0.25	2.5417
7	0.3	2.55
8	0.35	2.5583
9	0.4	2.5667
10	0.45	2.575
11	0.5	2.5833
12	0.55	2.5917
13	0.6	2.6
14	0.65	2.6083
15	0.7	2.6167
16	0.75	2.625
17	0.8	2.6333
18	0.85	2.6417
19	0.9	2.65
20	0.95	2.6583
21	1	2.6667
22	1.05	2.675
23	1.1	2.6833
24	1.15	2.6917
25	1.2	2.7
26	1.25	2.7083
27	1.3	2.7167
28	1.35	2.725
29	1.4	2.7333
30	1.45	2.7417
31	1.5	2.75
32	1.55	2.7583

****

UNEVEN WEIR FLOW PROGRAM
FORTRAN VERSION 1.0
PROJECT: Pima Road 3 Basins: Happy Valley DB overflow
DATE: 7/21/1997
TIME: 15:35.22

****

ELEVATION	DISCHARGE (CFS)
2089.5	0
2089.55	5.62
2089.6	15.94
2089.65	29.38
2089.7	45.39
2089.75	63.64
2089.8	83.93
2089.85	106.11
2089.9	130.07
2089.95	155.71
2090	182.97
2090.05	211.77
2090.1	242.08
2090.15	273.84
2090.2	307.01
2090.25	341.58
2090.3	377.5
2090.35	414.75
2090.4	453.32
2090.45	493.17
2090.5	534.29
2090.55	576.66
2090.6	620.27
2090.65	665.11
2090.7	711.16
2090.75	758.41
2090.8	806.86
2090.85	856.48
2090.9	907.28
2090.95	959.25
2091	1012.37
2091.05	1066.65

APPENDIX C

Deer Valley Detention Basin Stage/Storage/Discharge Relations
and
Supporting Technical Calculations and Output

Table C-1

HY8 Inlet Control 54" rcp			StormCad Hydraulic Gradeline 54" rcp		Interplated Values		
Discharge cfs	Depth feet	Stage feet	Discharge cfs	Stage feet	Discharge cfs	HY8 Stage feet	StormCad Stage feet
0	0	1855.00	0	1855	0	1855.00	1855.00
30	2.14	1857.14	20	1856.36	20	1856.43	1856.36
60	3.31	1858.31	40	1856.96	40	1857.53	1856.96
90	4.27	1859.27	60	1857.43	60	1858.31	1857.43
120	5.29	1860.29	80	1857.84	80	1858.95	1857.84
150	6.53	1861.53	100	1858.29	100	1859.61	1858.29
180	8.05	1863.05	120	1860.08	120	1860.29	1860.08
210	9.9	1864.90	140	1861.8	140	1861.12	1861.80
240	12.04	1867.04	160	1863.71	160	1862.04	1863.71
270	14.46	1869.46	180	1865.82	180	1863.05	1865.82
300	17.14	1872.14	200	1868.14	200	1864.28	1868.14
			210	1869.38	210	1864.90	1869.38
			220	1870.67	220	1865.61	1870.67
			230	1872.02	230	1866.33	1872.02
			240	1873.43	240	1867.04	1873.43
			250	1874.89	250	1867.85	1874.89
			260	1877.29	260	1868.65	1877.29
			270	1882.35	270	1869.46	1882.35

Deer Valley Detention Basin Rating Curves for the 100-year, 6-hour storm

Stage feet	Volume acre-feet	Discharge cfs
1855.00	0	0
1856.00	0.2	14
1856.43	0.4	20
1857.00	0.7	30
1857.53	1.2	40
1858.00	1.7	52
1858.31	2.3	60
1858.95	3.4	80
1859.00	3.5	82
1859.61	5.1	100
1860.00	6.1	111
1860.29	8.0	120
1861.80	17.8	140
1863.71	30.2	160
1865.00	38.6	172
1865.82	46.5	180
1868.14	68.9	200
1869.38	80.9	210
1870.00	86.9	215
1870.67	94.4	220
1872.02	109.6	230
1873.43	125.5	240
1874.89	142.0	250
1875.00	143.2	250
1877.29	173.7	260
1880.00	209.9	265
1881.00	224.1	267
1882.35	---	270

Table C-2

HY8 Inlet Control 54" rcp			StormCad Hydraulic Gradeline 54" rcp		Interplated Values			Weir flow	
Discharge	Depth	Stage	Discharge	Stage	Discharge	HY8 Stage	StormCad Stage	Discharge	Stage
cfs	feet	feet	cfs	feet	cfs	feet	feet	cfs	feet
0	0	1855.00	0	1855	0	1855.00	1855.00	0	1879.5
30	2.14	1857.14	20	1856.36	20	1856.43	1856.36	15.9	1879.6
60	3.31	1858.31	40	1856.96	40	1857.53	1856.96	45.4	1879.7
90	4.27	1859.27	60	1857.43	60	1858.31	1857.43	83.9	1879.8
120	5.29	1860.29	80	1857.84	80	1858.95	1857.84	130.1	1879.9
150	6.53	1861.53	100	1858.29	100	1859.61	1858.29	183	1880
180	8.05	1863.05	120	1860.08	120	1860.29	1860.08	242.1	1880.1
210	9.9	1864.90	140	1861.8	140	1861.12	1861.80	307.1	1880.2
240	12.04	1867.04	160	1863.71	160	1862.04	1863.71	377.5	1880.3
270	14.46	1869.46	180	1865.82	180	1863.05	1865.82	453.3	1880.4
300	17.14	1872.14	200	1868.14	200	1864.28	1868.14	534.3	1880.5
			210	1869.38	210	1864.90	1869.38	620.3	1880.6
			220	1870.67	220	1865.61	1870.67	711.2	1880.7
			230	1872.02	230	1866.33	1872.02	806.9	1880.8
			240	1873.43	240	1867.04	1873.43	907.3	1880.9
			250	1874.89	250	1867.85	1874.89	1012.4	1881
			260	1877.29	260	1868.65	1877.29		
			270	1882.35	270	1869.46	1882.35		

		Volume		
Stage	Area	Incr.	Sed.	Accum.
feet	acres	acre-feet	acre-feet	acre-feet
1855	0.0743	0	---	0
1856	0.3343	0.2	0	0.2
1857	0.734	0.5	0	0.7
1858	1.3783	1.0	0	1.7
1859	2.0893	1.7	0	3.5
1860	5.4852	3.7	1	6.1
1865	9.7227	37.5	5	38.6
1870	11.1895	52.2	4	86.9
1875	12.5576	59.3	3	143.2
1880	14.1306	66.7	0	209.9
1881	14.314	14.2	0	224.1

Happy Valley Detention Basin
Rating Cuves for the
100-year, 24-hour storm

		Discharge		
Stage	Volume	Pipe	Weir	Total
feet	acre-feet	cfs	cfs	cfs
1855.00	0	0	0	0
1856.00	0.2	14	0	14
1856.43	0.4	20	0	20
1857.00	0.7	30	0	30
1857.53	1.2	40	0	40
1858.00	1.7	52	0	52
1858.31	2.3	60	0	60
1858.95	3.4	80	0	80
1859.00	3.5	82	0	82
1859.61	5.1	100	0	100
1860.00	6.1	111	0	111
1860.29	8.0	120	0	120
1861.80	17.8	140	0	140
1863.71	30.2	160	0	160
1865.00	38.6	172	0	172
1865.82	46.5	180	0	180
1868.14	68.9	200	0	200
1869.38	80.9	210	0	210
1870.00	86.9	215	0	215
1870.67	94.4	220	0	220
1872.02	109.6	230	0	230
1873.43	125.5	240	0	240
1874.89	142.0	250	0	250
1875.00	143.2	250	0	250
1877.29	173.7	260	0	260
1879.50	203.2	264	0	264
1879.60	204.6	265	16	280
1879.70	205.9	265	45	310
1879.80	207.2	265	84	349
1879.90	208.6	265	130	395
1880.00	209.9	265	183	448
1880.10	211.3	266	242	508
1880.20	212.7	266	307	573
1880.30	214.2	266	378	643
1880.40	215.6	266	453	719
1880.50	217.0	266	534	801
1880.60	218.4	267	620	887
1880.70	219.8	267	711	978
1880.80	221.3	267	807	1074
1880.90	222.7	267	907	1174
1881.00	224.1	267	1012	1280

CURRENT DATE: 07-24-1997 FILE DATE: 07-24-1997
CURRENT TIME: 09:13:39 FILE NAME: DV-54

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.0 **********

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1855.00	1851.00	800.01	1 RCP	4.50	4.50	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: DV-54 DATE: 07-24-1997

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1855.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1857.14	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1858.31	60.0	60.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1859.27	90.0	90.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1860.29	120.0	120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1861.53	150.0	150.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1863.27	180.0	180.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1867.06	210.0	210.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1870.87	240.0	240.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1874.99	270.0	270.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1879.56	300.0	300.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1885.00	332.1	332.1	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: DV-54 DATE: 07-24-1997

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1855.00	0.000	0.00	0.00	0.00
1857.14	0.000	30.00	0.00	0.00
1858.31	0.000	60.00	0.00	0.00
1859.27	0.000	90.00	0.00	0.00
1860.29	0.000	120.00	0.00	0.00
1861.53	0.000	150.00	0.00	0.00
1863.27	0.000	180.00	0.00	0.00
1867.06	0.000	210.00	0.00	0.00
1870.87	0.000	240.00	0.00	0.00
1874.99	0.000	270.00	0.00	0.00
1879.56	0.000	300.00	0.00	0.00

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

CURRENT DATE: 07-24-1997 FILE DATE: 07-24-1997
CURRENT TIME: 09:13:39 FILE NAME: DV-54

PERFORMANCE CURVE FOR CULVERT 1 - 1(4.50 (ft) BY 4.50 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1855.00	0.00	-4.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
30.00	1857.14	2.14	-0.73	1-S2n	1.36	1.55	1.25	0.93	8.25	0.00
60.00	1858.31	3.31	0.34	1-S2n	1.97	2.25	1.85	1.36	9.73	0.00
90.00	1859.27	4.27	1.80	1-S2n	2.50	2.78	2.38	1.68	10.57	0.00
120.00	1860.29	5.29	3.71	1-S2n	3.04	3.22	2.92	1.94	11.01	0.00
150.00	1861.53	6.53	6.39	2-M2c	3.68	3.59	3.59	2.18	11.02	0.00
180.00	1863.27	8.05	8.27	2-M2c	4.50	3.86	3.86	2.38	12.45	0.00
210.00	1867.06	9.90	12.06	2-M2c	4.50	4.12	4.12	2.57	13.81	0.00
240.00	1870.87	12.04	15.87	2-M2c	4.50	4.38	4.38	2.74	15.30	0.00
270.00	1874.99	14.46	19.99	6-FFc	4.50	4.50	4.50	2.90	16.98	0.00
300.00	1879.56	17.14	24.56	6-FFc	4.50	4.50	4.50	3.05	18.86	0.00

El. inlet face invert 1855.00 ft El. outlet invert 1851.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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

INLET STATION	0.00 ft
INLET ELEVATION	1855.00 ft
OUTLET STATION	800.00 ft
OUTLET ELEVATION	1851.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0050
CULVERT LENGTH ALONG SLOPE	800.01 ft

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

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	4.50 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 07-24-1997
CURRENT TIME: 09:13:39

FILE DATE: 07-24-1997
FILE NAME: DV-54

****
********** TAILWATER **********
****
****

TAILWATER RATING CURVE

FLOW (cfs)	W.S.E.(ft)	DEPTH (ft)
0	1851.00	0.00
30	1851.93	0.93
60	1852.36	1.36
90	1852.68	1.68
120	1852.94	1.94
150	1853.18	2.18
180	1853.38	2.38
210	1853.57	2.57
240	1853.74	2.74
270	1853.90	2.90
300	1854.05	3.05

****

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	1.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	1885.00 ft

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Table C-3

Deer valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
I-1	20	1,886.00	1,855.00	1,856.36	1,856.27
MH-13	20	1,875.00	1,853.18	1,854.63	1,854.45
MH-10	20	1,865.50	1,851.95	1,853.70	1,853.22
MH-9	20	1,856.40	1,846.00	1,847.29	1,847.27
MH-8	20	1,840.80	1,829.00	1,830.54	1,830.52
MH-7	20	1,825.00	1,815.01	1,816.30	1,816.28
Outlet	20	1,812.00	1,800.98	1,801.84	1,801.84
I-1	40	1,886.00	1,855.00	1,856.96	1,856.82
MH-13	40	1,875.00	1,853.18	1,855.27	1,855.00
MH-10	40	1,865.50	1,851.95	1,854.48	1,853.77
MH-9	40	1,856.40	1,846.00	1,847.86	1,847.82
MH-8	40	1,840.80	1,829.00	1,831.11	1,831.07
MH-7	40	1,825.00	1,815.01	1,816.87	1,816.83
Outlet	40	1,812.00	1,800.98	1,802.19	1,802.19
I-1	60	1,886.00	1,855.00	1,857.43	1,857.25
MH-13	60	1,875.00	1,853.18	1,855.78	1,855.43
MH-10	60	1,865.50	1,851.95	1,855.12	1,854.20
MH-9	60	1,856.40	1,846.00	1,848.29	1,848.25
MH-8	60	1,840.80	1,829.00	1,831.54	1,831.50
MH-7	60	1,825.00	1,815.01	1,817.30	1,817.26
Outlet	60	1,812.00	1,800.98	1,802.47	1,802.47
I-1	80	1,886.00	1,855.00	1,857.84	1,857.62
MH-13	80	1,875.00	1,853.18	1,856.31	1,855.94
MH-10	80	1,865.50	1,851.95	1,855.69	1,854.57
MH-9	80	1,856.40	1,846.00	1,848.67	1,848.62
MH-8	80	1,840.80	1,829.00	1,831.92	1,831.87
MH-7	80	1,825.00	1,815.01	1,817.68	1,817.63
Outlet	80	1,812.00	1,800.98	1,802.72	1,802.72
I-1	100	1,886.00	1,855.00	1,858.29	1,858.05
MH-13	100	1,875.00	1,853.18	1,857.08	1,856.75
MH-10	100	1,865.50	1,851.95	1,856.22	1,854.89
MH-9	100	1,856.40	1,846.00	1,849.00	1,848.94
MH-8	100	1,840.80	1,829.00	1,832.25	1,832.19
MH-7	100	1,825.00	1,815.01	1,818.01	1,817.95
Outlet	100	1,812.00	1,800.98	1,802.95	1,802.95
I-1	120	1,886.00	1,855.00	1,860.08	1,859.91
MH-13	120	1,875.00	1,853.18	1,858.22	1,857.88

Table C-3

Deer valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
MH-10	120	1,865.50	1,851.95	1,856.74	1,855.18
MH-9	120	1,856.40	1,846.00	1,849.30	1,849.23
MH-8	120	1,840.80	1,829.00	1,832.55	1,832.48
MH-7	120	1,825.00	1,815.01	1,818.31	1,818.24
Outlet	120	1,812.00	1,800.98	1,803.17	1,803.17
I-1	140	1,886.00	1,855.00	1,861.80	1,861.56
MH-13	140	1,875.00	1,853.18	1,859.27	1,858.80
MH-10	140	1,865.50	1,851.95	1,857.25	1,855.43
MH-9	140	1,856.40	1,846.00	1,849.57	1,849.48
MH-8	140	1,840.80	1,829.00	1,832.82	1,832.73
MH-7	140	1,825.00	1,815.01	1,818.58	1,818.49
Outlet	140	1,812.00	1,800.98	1,803.38	1,803.38
I-1	160	1,886.00	1,855.00	1,863.71	1,863.40
MH-13	160	1,875.00	1,853.18	1,860.40	1,859.79
MH-10	160	1,865.50	1,851.95	1,857.76	1,855.65
MH-9	160	1,856.40	1,846.00	1,849.80	1,849.70
MH-8	160	1,840.80	1,829.00	1,833.05	1,832.95
MH-7	160	1,825.00	1,815.01	1,818.81	1,818.71
Outlet	160	1,812.00	1,800.98	1,803.58	1,803.58
I-1	180	1,886.00	1,855.00	1,865.82	1,865.42
MH-13	180	1,875.00	1,853.18	1,861.63	1,860.85
MH-10	180	1,865.50	1,851.95	1,858.29	1,855.84
MH-9	180	1,856.40	1,846.00	1,850.00	1,849.89
MH-8	180	1,840.80	1,829.00	1,833.25	1,833.14
MH-7	180	1,825.00	1,815.01	1,819.01	1,818.90
Outlet	180	1,812.00	1,800.98	1,803.79	1,803.79
I-1	200	1,886.00	1,855.00	1,868.14	1,867.64
MH-13	200	1,875.00	1,853.18	1,862.96	1,862.00
MH-10	200	1,865.50	1,851.95	1,858.84	1,855.99
MH-9	200	1,856.40	1,846.00	1,850.17	1,850.04
MH-8	200	1,840.80	1,829.00	1,833.42	1,833.29
MH-7	200	1,825.00	1,815.01	1,819.18	1,819.05
Outlet	200	1,812.00	1,800.98	1,804.01	1,804.01
I-1	210	1,886.00	1,855.00	1,869.38	1,868.83
MH-13	210	1,875.00	1,853.18	1,863.67	1,862.61
MH-10	210	1,865.50	1,851.95	1,859.13	1,856.05
MH-9	210	1,856.40	1,846.00	1,850.25	1,850.10

Table C-3

Deer valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
MH-8	210	1,840.80	1,829.00	1,833.50	1,833.35
MH-7	210	1,825.00	1,815.01	1,819.26	1,819.11
Outlet	210	1,812.00	1,800.98	1,804.12	1,804.12
I-1	220	1,886.00	1,855.00	1,870.67	1,870.08
MH-13	220	1,875.00	1,853.18	1,864.41	1,863.25
MH-10	220	1,865.50	1,851.95	1,859.43	1,856.10
MH-9	220	1,856.40	1,846.00	1,850.31	1,850.15
MH-8	220	1,840.80	1,829.00	1,833.56	1,833.40
MH-7	220	1,825.00	1,815.01	1,819.32	1,819.16
Outlet	220	1,812.00	1,800.98	1,804.24	1,804.24
I-1	230	1,886.00	1,855.00	1,872.02	1,871.37
MH-13	230	1,875.00	1,853.18	1,865.18	1,863.91
MH-10	230	1,865.50	1,851.95	1,859.73	1,856.15
MH-9	230	1,856.40	1,846.00	1,850.37	1,850.20
MH-8	230	1,840.80	1,829.00	1,833.62	1,833.45
MH-7	230	1,825.00	1,815.01	1,819.38	1,819.21
Outlet	230	1,812.00	1,800.98	1,804.36	1,804.36
I-1	240	1,886.00	1,855.00	1,873.43	1,872.72
MH-13	240	1,875.00	1,853.18	1,865.98	1,864.60
MH-10	240	1,865.50	1,851.95	1,860.05	1,856.19
MH-9	240	1,856.40	1,846.00	1,850.43	1,850.24
MH-8	240	1,840.80	1,829.00	1,833.68	1,833.49
MH-7	240	1,825.00	1,815.01	1,819.44	1,819.25
Outlet	240	1,812.00	1,800.98	1,804.49	1,804.49
I-1	250	1,886.00	1,855.00	1,874.89	1,874.12
MH-13	250	1,875.00	1,853.18	1,866.81	1,865.31
MH-10	250	1,865.50	1,851.95	1,860.37	1,856.23
MH-9	250	1,856.40	1,846.00	1,850.48	1,850.28
MH-8	250	1,840.80	1,829.00	1,833.73	1,833.53
MH-7	250	1,825.00	1,815.01	1,819.49	1,819.29
Outlet	250	1,812.00	1,800.98	1,804.64	1,804.64
I-1	260	1,886.00	1,855.00	1,877.29	1,876.46
MH-13	260	1,875.00	1,853.18	1,868.55	1,866.93
MH-10	260	1,865.50	1,851.95	1,861.59	1,857.27
MH-9	260	1,856.40	1,846.00	1,850.52	1,850.31
MH-8	260	1,840.80	1,829.00	1,833.77	1,833.56
MH-7	260	1,825.00	1,815.01	1,819.53	1,819.32

Table C-3

Deer valley basin outlet conduit node report

Node	Discharge (cfs)	Rim Elev (ft)	Sump Elev (ft)	HGL In (ft)	HGL Out (ft)
Outlet	260	1,812.00	1,800.98	1,804.81	1,804.81
I-1	270	1,886.00	1,855.00	1,882.35	1,881.46
MH-13	270	1,875.00	1,853.18	1,872.92	1,871.18
MH-10	270	1,865.50	1,851.95	1,865.42	1,860.76
MH-9	270	1,856.40	1,846.00	1,853.48	1,853.26
MH-8	270	1,840.80	1,829.00	1,836.69	1,836.47
MH-7	270	1,825.00	1,815.01	1,819.37	1,819.13
Outlet	270	1,812.00	1,800.98	1,805.10	1,805.10

Table C-4

Deer valley basin outlet conduit pipe report

Pipe	Upstream Node	Downstream Node	Discharge (cfs)	Length (ft)	Shape	Size	Roughness	Upstream Ground Elevation (ft)	Upstream Invert Elevation (ft)	Upstream HGL (ft)	Downstream Ground Elevation (ft)	Downstream Invert Elevation (ft)	Downstream HGL (ft)
P-13	I-1	MH-13	20	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,856.27	1,875.00	1,853.18	1,854.63
P-12	MH-13	MH-10	20	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,854.45	1,865.50	1,851.95	1,853.70
P-11	MH-10	MH-9	20	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,853.22	1,856.40	1,846.00	1,847.29
P-10	MH-9	MH-8	20	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,847.27	1,840.80	1,829.25	1,830.54
P-9	MH-8	MH-7	20	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,830.52	1,825.00	1,815.51	1,816.38
P-8	MH-7	Outlet	20	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,816.28	1,812.00	1,800.98	1,801.84
P-13	I-1	MH-13	40	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,856.82	1,875.00	1,853.18	1,855.27
P-12	MH-13	MH-10	40	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,855.00	1,865.50	1,851.95	1,854.48
P-11	MH-10	MH-9	40	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,853.77	1,856.40	1,846.00	1,847.86
P-10	MH-9	MH-8	40	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,847.82	1,840.80	1,829.25	1,831.11
P-9	MH-8	MH-7	40	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,831.07	1,825.00	1,815.51	1,816.74
P-8	MH-7	Outlet	40	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,816.83	1,812.00	1,800.98	1,802.19
P-13	I-1	MH-13	60	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,857.25	1,875.00	1,853.18	1,855.78
P-12	MH-13	MH-10	60	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,855.43	1,865.50	1,851.95	1,855.12
P-11	MH-10	MH-9	60	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,854.20	1,856.40	1,846.00	1,848.29
P-10	MH-9	MH-8	60	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,848.25	1,840.80	1,829.25	1,831.54
P-9	MH-8	MH-7	60	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,831.50	1,825.00	1,815.51	1,817.02
P-8	MH-7	Outlet	60	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,817.26	1,812.00	1,800.98	1,802.47
P-13	I-1	MH-13	80	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,857.62	1,875.00	1,853.18	1,856.31
P-12	MH-13	MH-10	80	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,855.94	1,865.50	1,851.95	1,855.69
P-11	MH-10	MH-9	80	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,854.57	1,856.40	1,846.00	1,848.67
P-10	MH-9	MH-8	80	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,848.62	1,840.80	1,829.25	1,831.92
P-9	MH-8	MH-7	80	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,831.87	1,825.00	1,815.51	1,817.28
P-8	MH-7	Outlet	80	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,817.63	1,812.00	1,800.98	1,802.72
P-13	I-1	MH-13	100	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,858.05	1,875.00	1,853.18	1,857.08
P-12	MH-13	MH-10	100	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,856.75	1,865.50	1,851.95	1,856.22
P-11	MH-10	MH-9	100	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,854.89	1,856.40	1,846.00	1,849.00
P-10	MH-9	MH-8	100	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,848.94	1,840.80	1,829.25	1,832.25
P-9	MH-8	MH-7	100	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,832.19	1,825.00	1,815.51	1,817.51
P-8	MH-7	Outlet	100	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,817.95	1,812.00	1,800.98	1,802.95
P-13	I-1	MH-13	120	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,859.91	1,875.00	1,853.18	1,858.22
P-12	MH-13	MH-10	120	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,857.88	1,865.50	1,851.95	1,856.74
P-11	MH-10	MH-9	120	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,855.18	1,856.40	1,846.00	1,849.30
P-10	MH-9	MH-8	120	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,849.23	1,840.80	1,829.25	1,832.55
P-9	MH-8	MH-7	120	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,832.48	1,825.00	1,815.51	1,817.73
P-8	MH-7	Outlet	120	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,818.24	1,812.00	1,800.98	1,803.17

Table C-4

Deer valley basin outlet conduit pipe report

Pipe	Upstream Node	Downstream Node	Discharge (cfs)	Length (ft)	Shape	Size	Roughness	Upstream Ground Elevation (ft)	Upstream Invert Elevation (ft)	Upstream HGL (ft)	Downstream Ground Elevation (ft)	Downstream Invert Elevation (ft)	Downstream HGL (ft)
P-13	I-1	MH-13	140	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,861.56	1,875.00	1,853.18	1,859.27
P-12	MH-13	MH-10	140	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,858.80	1,865.50	1,851.95	1,857.25
P-11	MH-10	MH-9	140	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,855.43	1,856.40	1,846.00	1,849.57
P-10	MH-9	MH-8	140	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,849.48	1,840.80	1,829.25	1,832.82
P-9	MH-8	MH-7	140	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,832.73	1,825.00	1,815.51	1,817.94
P-8	MH-7	Outlet	140	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,818.49	1,812.00	1,800.98	1,803.38
P-13	I-1	MH-13	160	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,863.40	1,875.00	1,853.18	1,860.40
P-12	MH-13	MH-10	160	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,859.79	1,865.50	1,851.95	1,857.76
P-11	MH-10	MH-9	160	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,855.65	1,856.40	1,846.00	1,849.80
P-10	MH-9	MH-8	160	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,849.70	1,840.80	1,829.25	1,833.05
P-9	MH-8	MH-7	160	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,832.95	1,825.00	1,815.51	1,818.15
P-8	MH-7	Outlet	160	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,818.71	1,812.00	1,800.98	1,803.58
P-13	I-1	MH-13	180	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,865.42	1,875.00	1,853.18	1,861.63
P-12	MH-13	MH-10	180	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,860.85	1,865.50	1,851.95	1,858.29
P-11	MH-10	MH-9	180	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,855.84	1,856.40	1,846.00	1,850.00
P-10	MH-9	MH-8	180	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,849.89	1,840.80	1,829.25	1,833.25
P-9	MH-8	MH-7	180	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.14	1,825.00	1,815.51	1,818.37
P-8	MH-7	Outlet	180	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,818.90	1,812.00	1,800.98	1,803.79
P-13	I-1	MH-13	200	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,867.64	1,875.00	1,853.18	1,862.96
P-12	MH-13	MH-10	200	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,862.00	1,865.50	1,851.95	1,858.84
P-11	MH-10	MH-9	200	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,855.99	1,856.40	1,846.00	1,850.17
P-10	MH-9	MH-8	200	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.04	1,840.80	1,829.25	1,833.42
P-9	MH-8	MH-7	200	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.29	1,825.00	1,815.51	1,818.59
P-8	MH-7	Outlet	200	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.05	1,812.00	1,800.98	1,804.01
P-13	I-1	MH-13	210	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,868.83	1,875.00	1,853.18	1,863.67
P-12	MH-13	MH-10	210	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,862.61	1,865.50	1,851.95	1,859.13
P-11	MH-10	MH-9	210	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,856.05	1,856.40	1,846.00	1,850.25
P-10	MH-9	MH-8	210	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.10	1,840.80	1,829.25	1,833.50
P-9	MH-8	MH-7	210	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.35	1,825.00	1,815.51	1,818.71
P-8	MH-7	Outlet	210	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.11	1,812.00	1,800.98	1,804.12
P-13	I-1	MH-13	220	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,870.08	1,875.00	1,853.18	1,864.41
P-12	MH-13	MH-10	220	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,863.25	1,865.50	1,851.95	1,859.43
P-11	MH-10	MH-9	220	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,856.10	1,856.40	1,846.00	1,850.31
P-10	MH-9	MH-8	220	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.15	1,840.80	1,829.25	1,833.56
P-9	MH-8	MH-7	220	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.40	1,825.00	1,815.51	1,818.83

Table C-4

Deer valley basin outlet conduit pipe report

Pipe	Upstream Node	Downstream Node	Discharge (cfs)	Length (ft)	Shape	Size	Roughness	Upstream Ground Elevation (ft)	Upstream Invert Elevation (ft)	Upstream HGL (ft)	Downstream Ground Elevation (ft)	Downstream Invert Elevation (ft)	Downstream HGL (ft)
P-8	MH-7	Outlet	220	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.16	1,812.00	1,800.98	1,804.24
P-13	I-1	MH-13	230	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,871.37	1,875.00	1,853.18	1,865.18
P-12	MH-13	MH-10	230	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,863.91	1,865.50	1,851.95	1,859.73
P-11	MH-10	MH-9	230	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,856.15	1,856.40	1,846.00	1,850.37
P-10	MH-9	MH-8	230	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.20	1,840.80	1,829.25	1,833.62
P-9	MH-8	MH-7	230	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.45	1,825.00	1,815.51	1,818.96
P-8	MH-7	Outlet	230	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.21	1,812.00	1,800.98	1,804.36
P-13	I-1	MH-13	240	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,872.72	1,875.00	1,853.18	1,865.98
P-12	MH-13	MH-10	240	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,864.60	1,865.50	1,851.95	1,860.05
P-11	MH-10	MH-9	240	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,856.19	1,856.40	1,846.00	1,850.43
P-10	MH-9	MH-8	240	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.24	1,840.80	1,829.25	1,833.68
P-9	MH-8	MH-7	240	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.49	1,825.00	1,815.51	1,819.10
P-8	MH-7	Outlet	240	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.25	1,812.00	1,800.98	1,804.49
P-13	I-1	MH-13	250	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,874.12	1,875.00	1,853.18	1,866.81
P-12	MH-13	MH-10	250	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,865.31	1,865.50	1,851.95	1,860.37
P-11	MH-10	MH-9	250	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,856.23	1,856.40	1,846.00	1,850.48
P-10	MH-9	MH-8	250	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.28	1,840.80	1,829.25	1,833.73
P-9	MH-8	MH-7	250	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.53	1,825.00	1,815.51	1,819.27
P-8	MH-7	Outlet	250	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.29	1,812.00	1,800.98	1,804.64
P-13	I-1	MH-13	260	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,876.46	1,875.00	1,853.18	1,868.55
P-12	MH-13	MH-10	260	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,866.93	1,865.50	1,851.95	1,861.59
P-11	MH-10	MH-9	260	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,857.27	1,856.40	1,846.00	1,850.52
P-10	MH-9	MH-8	260	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,850.31	1,840.80	1,829.25	1,833.77
P-9	MH-8	MH-7	260	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,833.56	1,825.00	1,815.51	1,819.49
P-8	MH-7	Outlet	260	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.32	1,812.00	1,800.98	1,804.81
P-13	I-1	MH-13	270	340	Circular	54 inch	0.015	1,886.00	1,855.00	1,881.46	1,875.00	1,853.18	1,872.92
P-12	MH-13	MH-10	270	229.36	Circular	54 inch	0.015	1,875.00	1,853.18	1,871.18	1,865.50	1,851.95	1,865.42
P-11	MH-10	MH-9	270	290	Circular	54 inch	0.015	1,865.50	1,851.95	1,860.76	1,856.40	1,846.00	1,853.48
P-10	MH-9	MH-8	270	660	Circular	54 inch	0.015	1,856.40	1,846.00	1,853.26	1,840.80	1,829.25	1,836.69
P-9	MH-8	MH-7	270	660	Circular	54 inch	0.015	1,840.80	1,829.25	1,836.47	1,825.00	1,815.51	1,819.84
P-8	MH-7	Outlet	270	642	Circular	54 inch	0.015	1,825.00	1,815.01	1,819.13	1,812.00	1,800.98	1,805.10

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UNEVEN WEIR FLOW PROGRAM
FORTRAN VERSION 1.0

****

PROJECT: Pima Road 3 Basins - Deer Valley DB overflow
ENGINEER: mcg
DATE: 7/28/1997
TIME: 11:51.46

INPUT PARAMETERS

STARTING WSEL: 1879.50
MAXIMUM WSEL: 1881.10
STEP SIZE: 0.05
BREADTH OF WEIR: 20.00

****

INPUT ELEVATION/STATION TABLE.
PROJECT: Pima Road 3 Basins - Deer Valley DB overflow
DATE: 7/28/1997
TIME: 11:51.46

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POINT	ELEVATION	STATION
1	1881	1000
2	1879.5	1000.1
3	1879.5	1200.1
4	1881	1200.2

****

WEIR COEFFICIENT TABLE
PROJECT: Pima Road 3 Basins - Deer Valley DB overflow
DATE: 7/28/1997
TIME: 11:51.46

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REFERENCE: COE CHART - UPPER CURVE

POINT	HEAD	COEFFICIENT
1	0	2.5
2	0.05	2.5083
3	0.1	2.5167
4	0.15	2.525
5	0.2	2.5333
6	0.25	2.5417
7	0.3	2.55
8	0.35	2.5583
9	0.4	2.5667
10	0.45	2.575
11	0.5	2.5833
12	0.55	2.5917
13	0.6	2.6
14	0.65	2.6083
15	0.7	2.6167
16	0.75	2.625
17	0.8	2.6333
18	0.85	2.6417
19	0.9	2.65
20	0.95	2.6583
21	1	2.6667
22	1.05	2.675
23	1.1	2.6833
24	1.15	2.6917
25	1.2	2.7
26	1.25	2.7083
27	1.3	2.7167
28	1.35	2.725
29	1.4	2.7333
30	1.45	2.7417
31	1.5	2.75
32	1.55	2.7583

****

UNEVEN WEIR FLOW PROGRAM
FORTRAN VERSION 1.0
PROJECT: Pima Road 3 Basins - Deer Valley DB overflow
DATE: 7/28/1997
TIME: 11:51.46

****

ELEVATION	DISCHARGE (CFS)
1879.5	0
1879.55	5.62
1879.6	15.94
1879.65	29.38
1879.7	45.39
1879.75	63.64
1879.8	83.93
1879.85	106.11
1879.9	130.07
1879.95	155.71
1880	182.97
1880.05	211.77
1880.1	242.08
1880.15	273.84
1880.2	307.01
1880.25	341.58
1880.3	377.5
1880.35	414.75
1880.4	453.32
1880.45	493.17
1880.5	534.29
1880.55	576.66
1880.6	620.27
1880.65	665.11
1880.7	711.16
1880.75	758.41
1880.8	806.86
1880.85	856.48
1880.9	907.28
1880.95	959.25
1881	1012.37
1881.05	1066.65

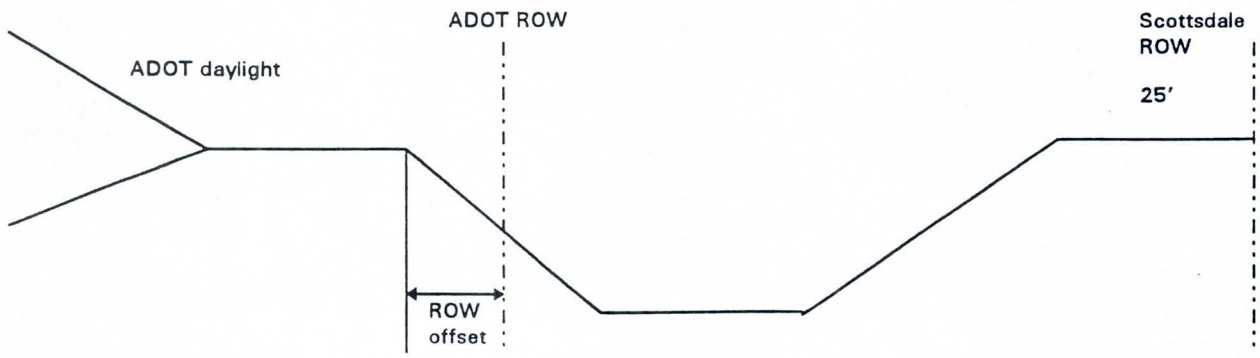
APPENDIX D

Outer Loop Detention Basin Stage/Storage/Discharge Relations

Super Basin - Hydrology VA_2a.dat
Single Basin Component
Release = 2,000 cfs - (dual 108" RCP)

*** note add (5) 10' x 10' culverts (L=100') to cost estimate for basin equalization**

	Station	Side Slope 1 z1	Side Slope 2 z2	Bottom Width (ft) b	Invert Elev.	Exist. Ground Elev.	Ex. Depth (ft) d	Channel Depth (ft) d	ROW Offset (ft)	Channel Top Width (ft)	Fill Width (ft)	Excavation Area (sf)	Fill Area (sf)	Reveg Length (ft)	ROW Width (ft)	Excavation Volume (cy)	Fill Volume (cy)	ROW Area (sf)	ROW Area (acre)	Salvage Area (sf)	Reveg Area (sf)	Soil Cement (2' toe) (cy)	Shotcrete (4") (2' toe) (sy)
Scottsdale	63+00	1.5	1.5	64.4	1601.0	1608.5	7.5	8.0	8.3	88.4	9.9	563.0	4.9	13	132								
																6531	79	33898	0.78	26970	4183	1867	1595
	60+00	1.5	1.5	64.4	1600.0	1608.0	8.0	9.0	-33.5	91.4	11.4	613.0	9.5	14	94								
																11778	229	45060	1.03	46450	7463	3407	2859
	55+00	1.5	1.5	64.4	1599.0	1607.5	8.5	10.0	-46.6	94.4	13.1	659.4	15.4	15	86								
																11662	511	44480	1.02	47950	7400	3704	3059
	50+00	1.5	1.5	64.4	1598.0	1605.9	7.9	11.0	-49.3	97.4	18.9	600.6	42.0	14	92								
																12330	697	34619	0.79	49450	7765	4000	3260
	45+00	1.5	1.5	64.4	1597.0	1606.4	9.3	12.0	-96.2	100.4	17.3	733.3	33.5	17	46								
																15506	438	21973	0.50	50950	9429	4296	3460
	40+00	1.5	1.5	64.4	1596.0	1607.6	11.6	13.0	-100.0	103.4	13.0	945.9	15.0	21	41								
																17691	381	23931	0.55	52450	10515	4593	3660
	35+00	1.5	1.5	64.4	1595.0	1606.8	11.8	14.0	-93.0	106.4	15.8	964.8	26.7	21	54								
																19956	326	30921	0.71	53950	11605	4889	3861
	30+00	1.5	1.5	64.4	1594.0	1608.0	14.0	15.0	-76.5	109.4	11.5	1194.5	9.9	25	69								
																23253	168	41930	0.96	55450	13124	5185	4061
	25+00	1.5	1.5	64.4	1593.0	1608.1	15.1	16.0	-50.1	112.4	11.0	1317.7	8.3	27	98								
																27973	51	51854	1.19	58120	15184	5713	4418
	20+00	1.5	1.5	64.4	1592.0	1610.6	18.6	18.6	-36.0	120.1	0.0	1712.0	0.0	33	109								
																31548	0	59660	1.37	59935	16667	6071	4660
	15+00	1.5	1.5	64.4	1591.0	1609.4	18.4	18.4	-15.1	119.7	0.0	1695.2	0.0	33	130								
																36662	0	75773	1.74	63288	18681	6733	5108
	10+00	1.5	1.5	64.4	1590.0	1613.0	23.0	23.0	15.1	133.5	0.0	2278.7	0.0	42	174								
Union Hills	43+00	1.5	1.5	64.4	1596.5	1609.1	12.6	12.6	-72.5	102.2	0.0	1049.6	0.0	23	55								
																12522	0	17182	0.39	31335	7220	2729	2178
	40+00	1.5	1.5	64.4	1596.0	1610.1	14.1	14.1	-71.9	106.7	0.0	1206.3	0.0	25	60								
																25354	0	32292	0.74	55592	14057	5213	4080
	35+00	1.5	1.5	64.4	1595.0	1612.1	17.1	17.1	-71.4	115.7	0.0	1538.7	0.0	31	69								
																30710	0	35693	0.82	59365	16324	5959	4584
	30+00	1.5	1.5	64.4	1594.0	1613.1	19.1	19.1	-73.3	121.8	0.0	1780.9	0.0	34	73								
																33398	0	54743	1.26	61173	17410	6316	4825
	25+00	1.5	1.5	64.4	1593.0	1612.5	19.5	19.5	-2.4	122.9	0.0	1826.2	0.0	35	146								
																35833	0	77683	1.78	62763	18366	6630	5037
	20+00	1.5	1.5	64.4	1592.0	1613.3	21.3	21.3	12.1	128.2	0.0	2045.8	0.0	38	165								
																38529	0	85080	1.95	64480	19398	6969	5267
	15+00	1.5	1.5	64.4	1591.0	1612.8	21.8	21.8	20.3	129.8	0.0	2115.5	0.0	39	175								
																40678	0	84550	1.94	65815	20200	7233	5445
	10+00	1.5	1.5	64.4	1590.0	1613.0	23.0	23.0	4.6	133.5	0.0	2278.7	0.0	42	163								
	Totals													**545**	**2032**	**431915**	**2880**	**851320**	**19.54**	**965485**	**234993**	**91505**	**71417**
																$1,295,746		**$3,405,281**		**$965,485**	**$11,750**	**$3,202,681**	**$2,856,672**


ADOT ROW
Scottsdale
ROW
25'
ADOT daylight
ROW
offset

APPENDIX E

Ultimate Condition 100-Year, 6-Hour HEC-1 Output File Printout

```
1**************************************
*                                    *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*             MAY  1991              *
*          VERSION 4.0.1E            *
*     Lahey F77L-EM/32 version 5.01  *
*       Dodson & Associates, Inc.    *
*  RUN DATE  03/25/98  TIME  13:53:49*
**************************************
```

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

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

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

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

```
1                                    HEC-1 INPUT                                                    PAGE  1

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

  1           ID    PIMA ROAD THREE BASINS                                  File:  ULTMT-6.IH1
  2           ID    by  Stantech for the City of Scottsdale            Original: 08-07-97     mcg
  3           ID        Project:  28900051
  4           ID
  5           ID
  6           ID    100-YEAR, 6-HOUR STORM
  7           ID        10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
  8           ID        10% LEVEL DESIGN FOR DEER VALLEY DETENTION BASIN ALTERNATIVE 3
  9           ID        10% LEVEL DESIGN FOR OUTER LOOP DETENTION BASIN ALTERNATIVE 1B
 10           ID
 11           ID        ULTIMATE CONDITION --- POWER LINE CHANNEL:
 12           ID          GRAYHAWK RUNOFF RELEASED TO NATURAL WASHES ARE COLLECTED IN THE
 13           ID          "POWER LINE CHANNEL" AND ROUTED TO THE OUTER LOOP DETENTION BASIN.
 14           ID          THE ULTIMATE LOCATION AND GEOMETRY OF THE POWER LINE CHANNEL WILL
 15           ID          BE DETERMINED BY OTHERS.
 16           ID
              *DIAGRAM
 17           IT       5                    720
 18           IO       5
 19           JD            .01
 20           JD             .1
 21           JD             .5
 22           JD              1
 23           JD              5
 24           JD             25
              *

 25           KK    S30N
 26           KM     RUNOFF FROM SUBBASIN 30N
 27           BA  0.6518
 28           PH                     .84    1.53    2.46    2.75    2.94    3.31
 29           LS              82      13              82      13
 30           UK     300   0.350    0.13      20
 31           UK     300   0.050    0.13      80
 32           RK    1550   0.069   0.045  0.0096    TRAP       0      12
 33           RK   10520   0.038   0.040            TRAP      15      15
              *

 34           KK    R30N
 35           KM     NORMAL DEPTH CHANNEL ROUTE FROM C30N TO C31.1 THROUGH PIMA CHANNEL
 36           RS       1    FLOW      -1
 37           RC   0.022   0.022   0.022    2470    0.01
 38           RX    1000    1012    1020    1028    1036    1044    1052    1064
 39           RY     107     104     102     100     100     102     104     107
              *

 40           KK   S31.1
 41           KM     RUNOFF FROM SUBBASIN 31.1
 42           BA  0.2663
 43           LS            76.6      13            76.6      13
 44           UK     300   0.567    0.13      10
 45           UK     300   0.050    0.13      90
 46           RK    1950   0.056   0.045  0.0147    TRAP       0      10
 47           RK    7600   0.035   0.040            TRAP      22       8
              *
```

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

  48          KK   C31.1
  49          KM     COMBINE ROUTED HYDROGRAPH FROM S30N WITH RUNOFF FROM SUBBASIN 31.1
  50          HC       2
              *
              *  R31.1
              *   ****  TOO SHORT TO ROUTE  ****
              *    NORMAL DEPTH CHANNEL ROUTE FROM C31.1 TO C34.1 THROUGH PIMA CHANNEL
              *      1    FLOW      -1
              *  0.022   0.022   0.022    1500    0.01
              *   1000    1012    1020    1028    1048    1056    1064    1076
              *    107     104     102     100     100     102     104     107
              *

  51          KK   S34.2
  52          KM     RUNOFF FROM SUBBASIN 34.2
  53          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
  54          BA  0.4441
  55          LS            77.3      12              77.3      12
  56          UK      50    0.10    0.13      10
  57          UK     300   0.040    0.13      90
  58          RK    2200  0.0452   0.045  0.0538    TRAP       0      10
  59          RK    8150  0.0386   0.045            TRAP       0      10
              *

  60          KK   C34.2
  61          KM     COMBINE ROUTED HYDROGRAPH FROM C31.1 WITH RUNOFF FROM SUBBASIN 34.2
  62          HC       2
              *

  63          KK    S35N
  64          KM     RUNOFF FROM SUBBASIN 35N
  65          BA  0.5482
  66          LS              82      13               82      13
  67          UK     300   0.491    0.13      15
  68          UK     300   0.113    0.13      85
  69          RK    2700   0.079   0.045  0.0242    TRAP       3       6
  70          RK    5050   0.028   0.040            TRAP      15      15
              *

  71          KK   D35NR
  72          KM     DIVERSION JUST DOWNSTREAM OF THE ALMA SCHOOL ROAD CULVERT
  73          KM        RIGHT BRANCH IS ROUTED TO C36.2
  74          KM        LEFT BRANCH (CODED ON DQ RECORD) IS ROUTED TO C36R1
  75          DT   D35NL
  76          DI       0      10      66     168     343     581     805     977    1168    1320
  77          DQ       0       4      28      73     154     261     360     435     518     575
              *

  78          KK   R35NR
  79          KM     NORMAL DEPTH CHANNEL ROUTE FROM S35N TO C36.2
  80          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
  81          RS       1    FLOW      -1
  82          RC    0.06    0.04    0.06    3500  0.0343
  83          RX    1000    1006    1026    1027    1057    1058    1078    1084
```



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

  84          RY     105     103     101     100     100     101     103     105
              *

  85          KK   S36.2
  86          KM     RUNOFF FROM SUBBASIN 36.2
  87          BA  0.2087
  88          LS            76.6      13              76.6      13
  89          UK     300   0.580    0.13       5
  90          UK     300   0.100    0.13      95
  91          RK    1800   0.036   0.045  0.0145    TRAP      10      10
  92          RK    3520   0.028   0.040            TRAP      20       6
              *

  93          KK   C36.2
  94          KM     COMBINE ROUTED HYDROGRAPH FROM S35N WITH RUNOFF FROM SUBBASIN 36.2
  95          HC       2  0.5411
              *

  96          KK  D36.2R
  97          KM     DIVERSION AT DESERT HIGHLANDS DRIVE
  98          KM        RIGHT BRANCH, AT GOLF CART CROSSING IS ROUTED TO C34.1
  99          KM        LEFT BRANCH (CODED ON DQ RECORD) IS ROUTED TO C36R1
 100          DT  D36.2L
 101          DI       0      36     166     288     360     430     538     681     859    1074
 102          DQ       0       0       0       0       0      18      60     123     208     315
              *

 103          KK  R36.2R
 104          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.2 TO C34.1
 105          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
```

```
106          RS       4    FLOW      -1
107          RC    0.06    0.04    0.06    7800  0.0321
108          RX    1000    1043    1053    1068    1093    1098    1133    1218
109          RY   102.6   100.6   100.5     100     100   100.5   100.6   102.6
             *

110          KK   S34.1
111          KM     RUNOFF FROM SUBBASIN 34.1
112          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
113          BA  1.1635
114          LS            77.3      12            77.3      12
115          UK     300   0.590    0.13      25
116          UK     300   0.040    0.13      75
117          RK    2570   0.085   0.045  0.0214    TRAP       0      10
118          RK    8800  0.0325   0.040            TRAP      20      10
             *

119          KK   C34.1
120          KM     COMBINE ROUTED HYDROGRAPH FROM C36.2 W/RUNOFF FROM SUBBASIN 34.1
121          HC       2  1.5423
             *
1                                          HEC-1 INPUT                                                    PAGE  4

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

122          KK  HVDB-I
123          KM     COMBINE HYDROGRAPH FROM C34.2 W/ C34.1
124          HC       2  2.9029
             *

125          KK  HVDB-O
126          KM     DETENTION BASIN AT HAPPY VALLEY ROAD - NONREGULATORY STRUCTURE
127          KM        PRINCIPAL SPILLWAY:  42" x 800' RCP WITH A SLOPE OF 0.5%
128          KM        13 ACRE-FEET OF STORAGE FOR SEDIMENTAION
129          RS       1    STOR      -1
130          SV       0     0.2     0.7     1.8     3.4     5.4    36.3    88.1   150.2   224.3
131          SV   240.0
132          SE    2065    2066    2067    2068    2069    2070    2075    2080    2085    2090
133          SE    2091
134          SQ       0      10      20      30      40      50      60      70      80      90
135          SQ     100     110     120     130     140     150
136          SE  2065.0 2066.13 2066.77 2067.45 2067.94 2068.42 2068.95 2070.44 2072.26 2074.32
137          SE  2076.6 2079.16 2081.95 2084.98 2088.25 2091.77
             *

138          KK   R34.1
139          KM     NORMAL DEPTH CHANNEL ROUTE FROM C34.1 TO C36.1 THROUGH PIMA CHANNEL
140          RS       1    FLOW      -1
141          RC   0.022   0.022   0.022    2200    0.01
142          RX    1000    1012    1020    1028    1036    1044    1052    1064
143          RY     107     104     102     100     100     102     104     107
             *

144          KK   S36.1
145          KM     RUNOFF FROM SUBBASIN 36.1
146          BA  0.1394
147          LS            73.4      11
148          UK     300  0.0420   0.130     100
149          RK    2330  0.0320   0.045  0.0134    TRAP      10      30
150          RK    3200  0.0270   0.040            TRAP      20      30
             *

151          KK   C36.1
152          KM     COMBINE ROUTED HYDROGRAPH FROM C34.1 WITH RUNOFF FROM SUBBASIN 36.1
153          HC       2
             *

154          KK   R36.1
155          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.1 TO C36R1 THROUGH PIMA CHANNEL
156          RS       1    FLOW      -1
157          RC   0.022   0.022   0.022    1520    0.01
158          RX    1000    1012    1020    1028    1036    1044    1052    1064
159          RY     107     104     102     100     100     102     104     107
             *
1                                          HEC-1 INPUT                                                    PAGE  5

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

160          KK   B35NL
161          KM     BRING BACK DIVERTED HYDROGRAPH FROM C35N
162          DR   D35NL
             *

163          KK   R35NL
164          KM     NORMAL DEPTH CHANNEL ROUTE FROM S35N TO C36R1
165          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
166          RS       5    FLOW      -1
167          RC    0.06    0.04    0.06   14480  0.0318
168          RX    1000    1040    1080    1086    1091    1097    1137    1174
169          RY     105     104     103     100     100     103     104     105
             *
```

```
170          KK  B36.2L
171          KM     BRING BACK DIVERTED HYDROGRAPH FROM C36.2
172          DR  D36.2L
             *

173          KK  R36.2L
174          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.2 TO C36R1
175          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
176          RS       3    FLOW       -1
177          RC    0.06    0.04    0.06   10160  0.0342
178          RX    1000    1030    1060    1066    1076    1082    1112    1142
179          RY     103   102.5     102     100     100     102   102.5     103
             *

180          KK  S36R1A
181          KM     RUNOFF FROM SUBBASIN 36R1A
182          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 36.3, 36R1 AND 35R ARE AREA WEIGHT
183          BA  0.6310
184          LS            74.3      10
185          UK     300   0.020   0.130     100
186          RK    1420   0.032   0.045  0.0061    TRAP       0      13
187          RK   10800   0.033   0.040            TRAP      10       9
             *

188          KK  C36R1A
189          KM     COMBINE ROUTED HYDROGRAPH FROM C36.1, D35NL & D36.2L W/RUNOFF FROM S36R1A
190          KM        AREA IS AREA FROM C36.1 + S36R1 + 40% OF AREA FROM S35N + 30% OF AREA
191          KM        FROM C36.2
192          HC       4  4.0530
             *

193          KK  S36R1B
194          KM     RUNOFF FROM SUBBASIN 36R1B
195          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 36.3, 36R1 AND 35R ARE AREA WEIGHT
196          BA  0.5863
197          LS            74.3      10
198          UK     300   0.020   0.130     100
199          RK    1420   0.032   0.045  0.0061    TRAP       0      13
200          RK    8500   0.033   0.040            TRAP      10       9
             *
```



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

201          KK  C36R1B
202          KM     COMBINE HYDROGRAPH FROM C36R1A W/RUNOFF FROM S36R1B AT C36R1B
203          HC       2  4.6393
             *
             * R36R1B
             *   ****  TOO SHORT TO ROUTE  ****
             *    NORMAL DEPTH CHANNEL ROUTE FROM C36R1B TO C36R2A THROUGH PIMA CHANNEL
             *       1    FLOW       -1
             *  0.022   0.022   0.022    1900    0.01
             *   1000    1012    1020    1028    1036    1044    1052    1064
             *    107     104     102     100     100     102     104     107
             *

204          KK  S36R2A
205          KM     RUNOFF FROM SUBBASIN 36R2A
206          BA  0.1325
207          LS             72      20
208          UK     100   0.045   0.130     100
209          RK    1900   0.032   0.017   0.015    TRAP      15       7
210          RK     800   0.030   0.035            TRAP      10       5
             *

211          KK  C36R2A
212          KM     COMBINE ROUTED HYDROGRAPH FROM C36R1B W/RUNOFF FROM SUBBASIN 36R2A
213          HC       2
             *

214          KK  R36R2A
215          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36R2A TO C36R2B THROUGH PIMA CHANNEL
216          KM     ****  TOO SHORT TO ROUTE  ****
217          KM       1    FLOW       -1
218          KM   0.022   0.022   0.022    2130    0.01
219          KM    1000    1012    1020    1028    1036    1044    1052    1064
220          KM     107     104     102     100     100     102     104     107
221          KM
222          KM     LAG THE HYDROGRAPH BY ONE TIME STEP TO ACCOUNT FOR SERIES OF INDIVIDUAL
223          KM     ROUTING REACHES THAT ARE TOO SHORT TO ROUTE.
224          KM        ASSUME WAVE CELERITY = 15-20 fps AND TOTAL LENGTH OF 5030'
225          RT                      1
             *

226          KK  S36R2B
227          KM     RUNOFF FROM SUBBASIN 36R2A
228          BA  0.2417
229          LS             72      12
230          UK     280   0.045   0.100     100
231          RK    1900   0.032   0.017   0.015    TRAP      15       7
```

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232          RK    7360   0.030   0.040            TRAP      30      10
             *
1                                        HEC-1 INPUT                                                    PAGE  7
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

233          KK  C36R2B
234          KM     COMBINE ROUTED HYDROGRAPH FROM C36R2A W/RUNOFF FROM SUBBASIN 36R2B
235          HC       2
             *

236          KK   S51.1
237          KM     RUNOFF FROM SUBBASIN 51.1
238          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 51.1 AND 49.1 ARE AREA WEIGHTED
239          BA   1.130
240          LS            73.9      12
241          UK     300   0.037   0.130     100
242          RK    1800   0.038   0.045  0.0161    TRAP       0      12
243          RK   14400   0.032   0.040            TRAP      40      15
             *

244          KK  DVDB-I
245          KM     COMBINE HYDROGRAPH FROM C36R2 W/RUNOFF FROM SUBBASIN 51.1
246          HC       2
             *

247          KK  DVDB-O
248          KM     DETENTION BASIN AT DEER VALLEY ROAD - NONREGULATORY STRUCTURE
249          KM        PRINCIPAL SPILLWAY:  54" x 800' RCP WITH A SLOPE OF 0.5%
250          KM        13 ACRE-FEET OF STORAGE FOR SEDIMENTAION
251          RS       1    STOR      -1
252          SV       0     0.2     0.7     1.7     3.5     6.1    38.6    86.9   143.2   209.9
253          SV   224.1
254          SE    1855    1856    1857    1858    1859    1860    1865    1870    1875    1880
255          SE    1881
256          SQ       0      20      40      60      80     100     120     140     160     180
257          SQ     200     210     220     230     240     250     260     270
258          SE    1855 1856.43 1857.53 1858.31 1858.95 1859.61 1860.29  1861.8 1863.71 1865.82
259          SE  1868.1 1869.38 1870.67 1872.02 1873.43 1874.89 1877.29 1882.35
             *
             *  R51.1
             *     DEER VALLEY BASIN OUTLET CONDUIT TO THOMPSON PEAK PARKWAY
             *     COMBINE WITH RUNOFF FROM DC RANCH
             *       L = 2820 feet
             *

260          KK  D51.1T
261          KM     DIVERT 100% OF FLOW TO RETRIEVE AT THOMPSON PEAK PARKWAY
262          DT  B51.1T
263          DI       0   10000
264          DQ       0   10000
             *
             *
             *     ****************  BEGIN DC RANCH WATERSHED  ****************
             *
             *       THE DC RANCH HEC-1 MODEL WAS DEVELOPED BY WOOD/PATEL ASSOCIATES
             *           WOOD/PATEL FILE NAME:  DC0721C.DAT
             *           MODEL DATE:            4 JANUARY 96
             *
1                                        HEC-1 INPUT                                                    PAGE  8
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

265          KK    52D4
266          KM   RUNOFF FROM SUBBASIN 52D4
267          BA    .070
268          LS              75    14.5
269          UK     120    .010     .15     100
270          RK    3100    .035    .045            TRAP      30      10
             *

271          KK   52D4R
272          KM   ROUTE 52D4C THROUGH 52D5 TO CP 52D5C
273          RK    1350    .033    .045            TRAP      10      10
             *

274          KK   52D4B
275          KM   RUNOFF FROM SUBBASIN 52D4B
276          BA    .022
277          LS              75      63
278          UK     120    .010     .15     100
279          RK    2200    .033    .045            TRAP      30      10
             *

280          KK  52D5C1
281          KM   COMBINE 52D4R AND 52D4B
282          HC       2
             *

283          KK   52D5A
284          KM   RUNOFF FROM 52D5A
```

```
 285          BA   .0232
 286          LS              75       63
 287          UK     120    .010     .15     100
 288          RK    1300    .032    .045            TRAP      30       10
              *

 289          KK  52D5AR
 290          KM   ROUTE 52D5A THROUGH BEARDSLEY CHANNEL TO CP 52D5C2
 291          RK     400   .0143    .035            TRAP      50        4
              *

 292          KK  52D5C2
 293          KM   COMBINE 25D5C1 AND 52D5AR
 294          HC       2
              *

 295          KK   52D5R
 296          KM   ROUTE 52D5C IN BEARDSLEY CHANNEL TO CP 52C3BC2
 297          RK     240   .0143    .035            TRAP      50        4
              *
1                                          HEC-1 INPUT                                                    PAGE  9

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

 298          KK    52C3
 299          KM   RUNOFF FROM SUBBASIN 52C3
 300          BA    .006
 301          LS              75       65
 302          UK     100     .02      .10     100
 303          RK     800    .033    .045            TRAP      30       10
              *

 304          KK   52C3R
 305          KM   ROUTE 52C3 THROUGH SUBBASIN 52C4 TO CP 52C4C1
 306          RK    1350    .034    .045            TRAP      10       10
              *

 307          KK   52C3B
 308          KM   RUNOFF FROM SUBBASIN 52C3B
 309          BA    .016
 310          LS              75       60
 311          UK     100     .02      .10     100
 312          RK    1400    .034    .045            TRAP      30       10
              *

 313          KK  2C3BC1
 314          KM   COMBINE 52C3B AND 52C3R
 315          HC       2
              *

 316          KK  2C3BC2
 317          KM   COMBINE 52C3BC1 AND 52C5R
 318          HC       2
              *

 319          KK  52C3BR
 320          KM   ROUTE 52C3BC2 IN BEARDSLEY CHANNEL TO CP 52C4C2
 321          RK     430   .0143    .035            TRAP      50        4
              *
              *

 322          KK     51C     SUB
 323          KM        RUNOFF FROM SUB 51C
 324          BA   .0972
 325          LS              74       15
 326          UK     100   .0213      .10     100
 327          RK    3900   .0375    .045            TRAP      30       10
              *

 328          KK   51C1D
 329          KM   DIVERT 67 PERCENT OF 51C TO WEST (33 PERCENT TO SOUTH)
 330          DT  51C1DV
 331          DI       0   10000
 332          DQ       0    6700
              *
1                                          HEC-1 INPUT                                                    PAGE 10

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

 333          KK   51C1R
 334          KM   ROUTE 51C1D THROUGH SUBBASIN 52C1
 335          RK    1350   .0364    .045            TRAP      10       10
              *

 336          KK    52C1
 337          KM   RUNOFF FROM SUBBASIN 52C1
 338          BA    .029
 339          LS              75     20.5
 340          UK     100     .02      .10     100
 341          RK    1350    .021    .045            TRAP      30       10
              *
```

```
342          KK   52C1C
343          KM   COMBINE 51C1R AND 52C1
344          HC       2   .0611
             *

345          KK   52C1R
346          KM   ROUTE 52C1C THROUGH BASIN 52C2A TO CP 52C2BC
347          RK    1500    .033    .045            TRAP      10       10
             *

348          KK   52C2A
349          KM   RUNOFF FROM SUBBASIN 52C2A
350          BA    .019
351          LS              75       2
352          UK     100     .02     .10     100
353          RK    1500    .033    .045            TRAP      30       10
             *

354          KK  52C2AC
355          KM   COMBINE 52C2A AND 52C1R
356          HC       2
             *

357          KK   52C2B
358          KM   RUNOFF FROM SUBBASIN 52C2B
359          BA   .0275
360          LS              75      11
361          UK     100     .02     .10     100
362          RK    2000    .030    .045            TRAP      30       10
             *

363          KK  52C2BC
364          KM   COMBINE 52C2B AND 52C2AC
365          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

366          KK  52C2BR
367          KM   ROUTE 52C2BC THROUGH 52C2C TO CP 52C2CC
368          RK    1500    .040    .045            TRAP      10       10
             *

369          KK   52C2C
370          KM   RUNOFF FROM SUBBASIN 52C2C
371          BA    .014
372          LS              75      62
373          UK     100     .02     .10     100
374          RK    1500     .04    .045            TRAP      30       10
             *

375          KK  52C2CC
376          KM   COMBINE 52C2C AND 52C2BR
377          HC       2
             *

378          KK   52C2R
379          KM   ROUTE 52C2CC THROUGH SUBBASIN 52C4 TO CP 52C4C1
380          RK    1550    .030    .045            TRAP      10       10
             *

381          KK    52C4
382          KM   RUNOFF FROM SUBBASIN 52C4
383          BA    .017
384          LS              75      60
385          UK     100     .02     .10     100
386          RK    1550    .030    .045            TRAP      30       10
             *

387          KK  52C4C1
388          KM   COMBINE 52C4 AND 52C2R
389          HC       2
             *

390          KK  52C4C2
391          KM   COMBINE 52C4C1 AND 52C3BR
392          HC       2
             *

393          KK   52C4R
394          KM   ROUTE 52C4C2 WEST IN BEARDSLEY CHANNEL TO CP 52C15C2
395          RK     850   .0143    .035            TRAP      50        4
             *

396          KK   52C13
397          KM   RUNOFF FROM SUBBASIN 52C13
398          BA    .023
399          LS              75      31
400          UK     100     .02     .10     100
401          RK     950    .040    .045            TRAP      30       10
```

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

                *
 402            KK  2C13DV
 403            KM   DIVERT FIRST 40 CFS INTO STORM DRAIN; REMAINDER FLOWS OVER ROAD
 404            DT   STORM
 405            DI       0      40    1000
 406            DQ       0      40      40
                *
                * KK52C13R
                * KM ROUTE 52C13 THROUGH SUBBASIN 52C15 TO CP 52C15C1
                * RK  1800    .035    .045            TRAP      10      10
                *

 407            KK   52C15
 408            KM   RUNOFF FROM SUBBASIN 52C15
 409            BA    .046
 410            LS              75    64.4
 411            UK     100     .02     .10     100
 412            RK    2050    .036    .045            TRAP      30      10
                *

 413            KK  2C15C1
 414            KM   COMBINE 52C15 AND 52C13DV
 415            HC       2    .046
                *

 416            KK  2C15C2
 417            KM   COMBINE 52C15C1 AND 52C4R
 418            HC       2
                *

 419            KK  52C15R
 420            KM   ROUTE 52C15C2 IN BEARDSLEY CHANNEL TO CP 52C14C3
 421            RK     750   .0143    .035            TRAP      50       4
                *

 422            KK  52C14A
 423            KM   RUNOFF FROM SUBBASIN 52C14A
 424            BA    .041
 425            LS              75    67.7
 426            UK     100     .02     .10     100
 427            RK    2050    .031    .045            TRAP      30      10
                *

 428            KK  2C14AC
 429            KM   COMBINE 52C14A AND 52C15R
 430            HC       2
                *

 431            KK  2C14AR
 432            KM   ROUTE 52C14AC IN BEARDSLEY CHANNEL TO CP 52C14BC2
 433            RK     380   .0143    .035            TRAP      50       4
                *
                *
```



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

 434            KK  51C1DV
 435            KM   RETRIEVE DIVERTED FLOW
 436            DR  51C1DV
                *

 437            KK   51C2D
 438            KM   DIVERT 27 PERCENT OF 51C1DV TO WEST (73 PERCENT TO SOUTH)
 439            DT  51C2DV
 440            DI       0   10000
 441            DQ       0    2700
                *

 442            KK   51C2R
 443            KM   ROUTE 51C2D THROUGH SUBBASIN 52C5 TO CP 52C5C
 444            RK     700    .030    .045            TRAP      10      10
                *

 445            KK    52C5
 446            KM   RUNOFF FROM SUBBASIN 52C5
 447            BA    .016
 448            LS              75      27
 449            UK     100     .02     .10     100
 450            RK    1200     .03    .045            TRAP      30      10
                *

 451            KK   52C5C
 452            KM   COMBINE 51C2R AND 52C5
 453            HC       2   .0635
                *
```

```
454          KK   52C5R
455          KM   ROUTE 52C5C THROUGH SUBBASIN 52C6 TO CP 52C6C
456          RK    3100    .035    .045            TRAP      10      10
             *

457          KK    52C6
458          KM   RUNOFF FROM SUBBASIN 52C6
459          BA    .036
460          LS              75    31.4
461          UK     100     .02     .10     100
462          RK    3100    .035    .045            TRAP      30      10
             *

463          KK   52C6C
464          KM   COMBINE 52C5R AND 52C6
465          HC       2
             *

466          KK   52C6R
467          KM   ROUTE 52C6C THROUGH SUBBASIN 52C10 TO CP 52C10C2
468          RK     450    .032    .045            TRAP      10      10
             *
```



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

469          KK  51C2DV
470          KM   RETRIEVE 52C2DV
471          DR  51C2DV
             *

472          KK   51C3R
473          KM   ROUTE 52C2DV THROUGH SUBBASIN 52C7 TO CP 52C7C
474          RK     700    .040    .045            TRAP      10      10
             *

475          KK     51B     SUB
476          KM        RUNOFF FROM SUB 51B
477          BA   .5711
478          LS       0    71.9    13.1
479          UK     100   .0213     .10     100
480          RK    8900   .0300    .045            TRAP      50      25
             *

481          KK   51B1D
482          KM   DIVERT 92 PERCENT OF SUBBASIN 51B TO WEST (8 PERCENT TO SOUTH)
483          DT  51B1DV
484          DI       0   10000
485          DQ       0    9200
             *

486          KK   51B1R
487          KM    ROUTE 51B1D THROUGH SUBBASIN 52C7 TO CP 52C7C
488          RK     450     .04    .045            TRAP      10      10
             *

489          KK    52C7
490          KM   RUNOFF FROM SUBBASIN 52C7
491          BA    .006
492          LS              75      27
493          UK     100     .02     .10     100
494          RK     550     .04    .045            TRAP      30      10
             *

495          KK   52C7C
496          KM   COMBINE 51B1R, 51C3R, AND 52C7
497          HC       3   .0693
             *

498          KK   52C7R
499          KM   ROUTE 52C7C THROUGH SUBBASIN 52C9 TO CP 52C9C1
500          RK    1550    .036    .045            TRAP      10      10
             *

501          KK  51B1DV
502          KM   RETRIEVE DIVERTED FLOW 51B1DV
503          DR  51B1DV
             *
```



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

504          KK   51B2D
505          KM   DIVERT 84 PERCENT OF 51B1DV TO WEST (16 PERCENT TO SOUTH)
506          DT  51B2DV
507          DI       0   10000
508          DQ       0    8400
             *

509          KK   51B2R
510          KM   ROUTE 51B2D THROUGH SUBBASIN 52C8 TO CP 52C8C
```

```
511          RK     750    .034    .045            TRAP      10      10
             *

512          KK    52C8
513          KM   RUNOFF FROM SUBBASIN 52C8
514          BA    .008
515          LS              75      27
516          UK     100     .02     .10     100
517          RK     750    .034    .045            TRAP      30      10
             *

518          KK   52C8C
519          KM   COMBINE 51B2R AND 52C8
520          HC       2   .4493
             *

521          KK   52C8R
522          KM   ROUTE 52C8C THROUGH SUBBASIN 52C9 TO CP 52C9C1
523          RK    1100    .036    .045            TRAP      10      10
             *

524          KK  52C9C1
525          KM   COMBINE 52C7R AND 52C8R
526          HC       2
             *

527          KK  52C9R1
528          KM   ROUTE 52C9C1 THROUGH SUBBASIN 52C9 TO CP 52C9C2
529          RK    1050    .036    .045            TRAP      10      10
             *

530          KK    52C9
531          KM   RUNOFF FROM SUBBASIN 52C9
532          BA    .069
533          LS              75   31.85
534          UK     100     .02     .10     100
535          RK    3150    .036    .045            TRAP      30      10
             *

536          KK  52C9C2
537          KM   COMBINE 52C9R1 AND 52C9
538          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

539          KK  52C9R2
540          KM   ROUTE 52C9C2 THROUGH SUBBASIN 52C10 TO CP 52C10C1
541          RK     500    .032    .045            TRAP      10      10
             *

542          KK  2C10C1
543          KM   COMBINE 52C9R2 AND 52C6R
544          HC       2
             *

545          KK  2C10R1
546          KM   ROUTE 52C10C1 THROUGH SUBBASIN 52C10 TO CP 52C10C2
547          RK     300    .032    .045            TRAP      10      10
             *

548          KK   52C10
549          KM   RUNOFF FROM SUBBASIN 52C10
550          BA    .014
551          LS              75    7.85
552          UK     100     .02     .10     100
553          RK     800    .032    .045            TRAP      30      10
             *

554          KK  2C10C2
555          KM   COMBINE 52C10R1 AND 52C10
556          HC       2
             *

557          KK   52C11
558          KM   RUNOFF FROM SUBBASIN 52C11
559          BA   .0425
560          LS              75      27
561          UK     100     .02     .10     100
562          RK    2800    .031    .045            TRAP      30      10
             *

563          KK  2C11R1
564          KM   PIPE ROUTE 52C11 TO CP 52C11C
565          RK     650     .02    .045            CIRC       3
             *

566          KK  52C13D
567          KM   RETRIEVE DIVERTED FLOW
568          DR   STORM
             *
```

```
 569          KK  52C11C
 570          KM   COMBINE 52C13D AND 52C11R1
 571          HC       2   .0655
              *
1                                          HEC-1 INPUT                                                    PAGE 17

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

 572          KK  2C11CR
 573          KM   PIPE ROUTE 52C11C TO CP 52C11C2
 574          RK     750     .02    .045            CIRC       3
              *

 575          KK  2C11C2
 576          KM   COMBINE 52C11CR AND 52C10C2
 577          HC       2
              *

 578          KK  2C11R2
 579          KM   ROUTE 52C11C2 THROUGH SUBBASIN 52C12 TO CP 52C12C
 580          RK     700     .03    .045            TRAP      10      10
              *

 581          KK   52C12
 582          KM   RUNOFF FROM SUBBASIN 52C12
 583          BA    .023
 584          LS              75      85
 585          UK     100     .02     .10     100
 586          RK     900     .03    .045            TRAP      30      10
              *

 587          KK  52C12C
 588          KM   COMBINE 52C11R2 AND 52C12
 589          HC       2
              *

 590          KK  52C12R
 591          KM   ROUTE 52C12C THROUGH SUBBASIN 52C14 TO CP 52C14C1
 592          RK    1150    .029    .045            TRAP      10      10
              *

 593          KK  52C14B
 594          KM   RUNOFF FROM SUBBASIN 52C14B
 595          BA    .021
 596          LS              75      60
 597          UK     100     .02     .10     100
 598          RK    1250    .029    .045            TRAP      30      10
              *

 599          KK  C14BC1
 600          KM   COMBINE 52C14B AND 52C12R
 601          HC       2
              *

 602          KK  C14BC2
 603          KM   COMBINE 52C14BC1 AND 52C14AR
 604          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE 18

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

 605          KK  52C14R
 606          KM   ROUTE 52C14C3 WEST IN BEARDSLEY CHANNEL TO CP 52B5C2
 607          RK     600   .0143    .035            TRAP      50       4
              *

 608          KK  51B2DV
 609          KM   RETRIEVE DIVERTED FLOW
 610          DR  51B2DV
              *

 611          KK   51B3D
 612          KM   DIVERT 84 PERCENT OF 51B2DV TO WEST (16 PERCENT TO SOUTH)
 613          DT  51B3DV
 614          DI       0   10000
 615          DQ       0    8400
              *

 616          KK   51B3R
 617          KM   ROUTE 51B3D THROUGH SUBBASIN 52B1 TO CP 52B1C
 618          RK     600    .039    .045            TRAP      10      10
              *

 619          KK    52B1
 620          KM   RUNOFF FROM SUBBASIN 52B1
 621          BA    .003
 622          LS              75      27
 623          UK     100     .02     .10     100
 624          RK     600    .039    .045            TRAP      30      10
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                *
 625            KK   52B1C
 626            KM   COMBINE 51B3R AND 52B1
 627            HC       2   .0736
                *

 628            KK   52B1R
 629            KM   ROUTE 52B1C THROUGH SUBBASIN 52B2 TO CP 52B2C1
 630            RK     930    .037    .045            TRAP      10       10
                *

 631            KK  51B3DV
 632            KM   RETRIEVE DIVERTED FLOW 51B3DV
 633            DR  51B3DV
                *

 634            KK   51B4D
 635            KM   DIVERT 82 PERCENT OF 51B3DV TO WEST (18 PERCENT TO SOUTH)
 636            DT  51B4DV
 637            DI       0   10000
 638            DQ       0    8200
                *
1                                          HEC-1 INPUT                                                    PAGE 19

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

 639            KK  51B4R1
 640            KM   ROUTE 51B4D THROUGH SUBBASIN 52B2 TO CP 52B2C1
 641            RK    1350    .037    .045            TRAP      10       10
                *

 642            KK  52B2C1
 643            KM   COMBINE 51B4R1 AND 52B1R
 644            HC       2   .1403
                *

 645            KK  52B2R1
 646            KM   ROUTE 52B2R1 THROUGH SUBBASIN 52B2 TO CP 52B2C2
 647            RK    1000    .037    .045            TRAP      10       10
                *

 648            KK    52B2
 649            KM   RUNOFF FROM SUBBASIN 52B2
 650            BA    .032
 651            LS              75      17
 652            UK     100     .02     .10     100
 653            RK    2350    .037    .045            TRAP      30       10
                *

 654            KK  52B2C2
 655            KM   COMBINE 52B2 AND 52B2R1
 656            HC       2
                *

 657            KK  52B2R2
 658            KM   ROUTE 52B2C2 THROUGH SUBBASIN 52B3 TO CP 52B3C2
 659            RK     850    .026    .045            TRAP      10       10
                *

 660            KK  52B3R1
 661            KM   ROUTE 52B3C1 THROUGH SUBBASIN 52B3 TO CP 52B3C2
 662            RK     500    .024    .045            TRAP      10       10
                *

 663            KK    52B3
 664            KM   RUNOFF FROM SUBBASIN 52B3
 665            BA    .062
 666            LS              75    31.8
 667            UK     100     .02     .10     100
 668            RK    3450    .030    .045            TRAP      30       10
                *

 669            KK  52B3C2
 670            KM   COMBINE 52B3 AND 52B3R1
 671            HC       2
                *
1                                          HEC-1 INPUT                                                    PAGE 20

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

 672            KK  52B3R2
 673            KM   ROUTE 52B3C2 THROUGH 52B4 TO CP 52B4C
 674            RK    1700    .024    .045            TRAP      10       10
                *

 675            KK    52B4
 676            KM   RUNOFF FROM SUBBASIN 52B4
 677            BA    .026
 678            LS              75      62
 679            UK     100     .02     .10     100
```

```
680          RK    1700    .024    .045            TRAP      30       10
             *

681          KK   52B4C
682          KM   COMBINE 52B4 AND 52B3R2
683          HC       2
             *

684          KK   52B4R
685          KM   ROUTE 52B4C THROUGH SUBBASIN 52B5 TO CP 52B5C1
686          RK     550    .027    .045            TRAP      10       10
             *

687          KK    52B5
688          KM   RUNOFF FROM SUBBASIN 52B5
689          BA    .021
690          LS              75    56.9
691          UK     100     .02     .10     100
692          RK    1400     .03    .045            TRAP      30       10
             *

693          KK  52B5C1
694          KM   COMBINE 52B5 AND 52B4R
695          HC       2
             *

696          KK  52B5C2
697          KM   COMBINE 52B5C1 AND 52C14R
698          HC       2
             *

699          KK   52B5R
700          KM   ROUTE 52B5C2 IN BEARDSLEY CHANNEL TO CP 52B7C2
701          RK    1100   .0143    .035            TRAP      50        4
             *

702          KK  51B4DV
703          KM   RETRIEVE DIVERTED FLOW 51B4DV
704          DR  51B4DV
             *
1                                        HEC-1 INPUT                                                    PAGE 21

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

705          KK   51B5D
706          KM   DIVERT 68 PERCENT OF 51B4DV TO WEST (32 PERCENT TO SOUTH)
707          DT  51B5DV
708          DI       0   10000
709          DQ       0    6800
             *

710          KK   51B5R
711          KM   ROUTE 51B5D THROUGH SUBBASIN 52B6 TO CP 51B7C
712          RK    1250    .035    .045            TRAP      10       10
             *

713          KK  51B5DV
714          KM   RETRIEVE DIVERTED FLOW
715          DR  51B5DV
             *

716          KK   51B6D
717          KM   DIVERT 53 PERCENT OF 51B5DV TO WEST (47 PERCENT TO SOUTH)
718          DT  51B6DV
719          DI       0   10000
720          DQ       0    5300
             *

721          KK   51B6R
722          KM   ROUTE 51B6D THROUGH SUBBASIN 52B6 TO CP 51B7C
723          RK     925    .033    .045            TRAP      10       10
             *

724          KK  51B6DV
725          KM   RETRIEVE DIVERTED FLOW 51B6DV
726          DR  51B6DV
             *

727          KK   51B7D
728          KM   DIVERT 58 PERCENT OF 51B6DV TO WEST (42 PERCENT TO SOUTH)
729          DT  51B7DV
730          DI       0   10000
731          DQ       0    5800
             *

732          KK  51B7R1
733          KM   ROUTE 51B7D THROUGH SUBBASIN 52B6 TO CP 51B7C
734          RK     530    .033    .045            TRAP      10       10
             *

735          KK   51B7C
736          KM   COMBINE 51B7R1, 51B5R, AND 51B6R
```

```
 737          HC       3   .2404
              *
1                                          HEC-1 INPUT                                                    PAGE 22
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 738          KK  51B7R2
 739          KM   ROUTE 51B7C THROUGH SUBBASIN 52B6 TO CP 52B6C
 740          RK    2300    .033    .045            TRAP      10       10
              *

 741          KK    52B6
 742          KM   RUNOFF FROM SUBBASIN 52B6
 743          BA    .096
 744          LS              75   13.55
 745          UK     100     .02     .10     100
 746          RK    3200    .033    .045            TRAP      30       10
              *

 747          KK   52B6C
 748          KM   COMBINE 51B7R2 AND 52B6
 749          HC       2
              *

 750          KK   52B6R
 751          KM   ROUTE 52B6C THROUGH SUBBASIN 52B7 TO CP 52B7C1
 752          RK    2750    .028    .045            TRAP      10       10
              *

 753          KK    52B7
 754          KM   RUNOFF FROM SUBBASIN 52B7
 755          BA    .080
 756          LS              75   78.45
 757          UK     100     .02     .10     100
 758          RK    2750    .028    .045            TRAP      30       10
              *

 759          KK  52B7C1
 760          KM   COMBINE 52B7 AND 52B6R
 761          HC       2
              *

 762          KK  52B7C2
 763          KM   COMBINE 52B7C1 AND 52B5R
 764          HC       2
              *

 765          KK    52A2
 766          KM   RUNOFF FROM SUBBASIN 52A2
 767          BA    .065
 768          LS              75    88.8
 769          UK     100     .02     .10     100
 770          RK    2900    .023    .045            TRAP      30       10
              *
1                                          HEC-1 INPUT                                                    PAGE 23
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 771          KK  52A2C2
 772          KM   COMBINE 52B7C2 AND 52A2
 773          HC       2    1.62
              *

 774          KK  51B7DV
 775          KM   RETRIEVE DIVERTED FLOW 51B7DV
 776          DR  51B7DV
              *

 777          KK   51B8R
 778          KM   ROUTE 51B7DV THROUGH SUBBASIN 52A1 TO CP 52A1C
 779          RK    3400    .033    .045            TRAP      10       10
              *

 780          KK    52A1
 781          KM   RUNOFF FROM SUBBASIN 52A1
 782          BA    .130
 783          LS              75   32.25
 784          UK     100     .02     .10     100
 785          RK    3400    .033    .045            TRAP      30       10
              *

 786          KK   52A1C
 787          KM   COMBINE 52A1 AND 51B8R
 788          HC       2
              *
              *
              *     ******************  END DC RANCH WATERSHED  ******************
              *
              *
              *     *****************  BEGIN GVSCE MODIFICATIONS  *****************
              *
```

```
 789          KK   D51.1
 790          KM   RETRIEVE DIVERTED FLOW
 791          DR  B51.1T
              *

 792          KK    C52A
 793          KM     COMBINE ROUTED HYDROGRAPH FROM C51.1 WITH HYDROGRAPH FROM C52A1C AT
 794          KM     THOMPSON PEAK PARKWAY
 795          HC       2  6.2735
              *
              *   R52A
              *     DEER VALLEY BASIN OUTLET CONDUIT TO OUTLET AT SIERRA PINTA CHANNEL
              *     COMBINE WITH RUNOFF FROM DC RANCH
              *       L = 3130 feet
              *
1                                          HEC-1 INPUT                                          PAGE 24

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

 796          KK     C52
 797          KM     COMBINE ROUTED HYDROGRAPH FROM C52A WITH HYDROGRAPH FROM C52A2C AT
 798          KM     BEARDSLEY ROAD
 799          HC       2  7.9160
              *

 800          KK     R52
 801          KM     NORMAL DEPTH CHANNEL ROUTE FROM C52 TO C53 THROUGH PIMA CHANNEL
 802          RS       1    FLOW      -1
 803          RC   0.022   0.022   0.022    4050    0.01
 804          RX    1000    1012    1020    1028    1058    1066    1074    1086
 805          RY     107     104     102     100     100     102     104     107
              *

 806          KK    D52T
 807          KM     DIVERT 100% OF FLOW TO RETRIEVE JUST U/S OF OUTER LOOP DETENTION BASIN
 808          DT    B52T
 809          DI       0   10000
 810          DQ       0   10000
              *

 811          KK   CLEAR
 812          KM     CLEAR HYDROGRAPHS FROM STACK
 813          HC       2
              *
              *
              *     ****************  BEGIN GRAYHAWK WATERSHED  ******************
              *
              *       THE GREYHAWK HEC-1 MODEL (VILLAGES II AND III) WAS DEVELOPED BY DEI
              *           DEI FILE NAME:  GH23FAB.H1I
              *           MODEL DATE:     21 MAY 96
              *

 814          KK     37A     SUB
 815          KM         RUNOFF FROM SUB-BASIN 37A
 816          BA   .6765
 817          LS             74    24.8
 818          UK      61   .0213     .10     100
 819          RK    4800   .0237    .045            TRAP      50     130
              *

 820          KK    37AE     DIV
 821          KM        SPLIT FLOWS AT SOUTH BOUNDARY OF SUB 37A FOR ROUTING TO DETENTION
 822          KM        BASIN 53R & 38R-1.  THIS DIVERT OPERATION REFLECTS THE BREAK IN THE
 823          KM        DEER VALLEY ROAD CHANNEL BETWEEN HAYDEN & PIMA ROADS.  THIS SPLIT IS
 824          KM        BASED ON NEW CORE NORTH PLAN DEVELOPED BY G.W. LARSON & ASSC., INC.
 825          KM        DATED 6/16/92.  DIVERT RATIO IS BASED ON APPROXIMATE D.A. FROM SUB 37A
 826          KM        THAT IS INTERCEPTED BY EACH CHANNEL SEGMENT ALONG DEER VALLEY ROAD.
 827          KM
 828          KM        (THIS SPLIT HAS BEEN UPDATED FROM THE OLP.6 MODEL TO REFLECT A 30% SPLIT
 829          KM        TO THE SOUTH AND A 70% SPLIT TO THE WEST FOR THIS STUDY AND IS BASED ON
 830          KM        UPSTREAM CONTRIBUTING WATERSHED AREA TO THIS CONCENTRATION POINT)
 831          DT    37AW
 832          DI       0     100     500    1000    1500
1                                          HEC-1 INPUT                                          PAGE 25

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

 833          DQ       0      70     350     700    1050
              *

 834          KK   37AE1      CP
 835          KM         ROUTE NON-DIVERTED FLOW FROM DIV 37AE THROUGH SUB 5N.  THIS IS A
 836          KM         PRELIMINARY CHANNEL CONFIGURATION FOR THE GOLF COURSE CHANNEL.
 837          RS       1    FLOW
 838          RC    .055    .045    .055     800    .025
 839          RX       0      16      26      30      40      44      54      70
 840          RY       6       2       2       0       0       2       2       6
              *

 841          KK   SUB5N
 842          KM         RUNOFF FROM SUBBASIN 5 IN NORTH 18 MODEL.
```

```
843          BA   0.029
844          LS              77      18
845          UK     100    .013     .15     100
846          RK    1000   0.005    .018    .015    TRAP      50      20
847          RK     500    .015    .025            TRAP      10       4
             *

848          KK    CP5N
849          KM        ADD HYDROGRAPHS AT CP5N
850          HC       2   0.232
             *

851          KK   RET5N
852          KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 5.  18" PIPE OUTFLOW WILL
853          KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
854          RS       1    STOR       0       0
855          SV       0     .04     .33     .93     1.8    2.35    3.16     4.2     6.1
856          SQ       0       8      10      12      15      17     102     191     668
857          SE    1797    1798    1800    1802    1804    1805    1806    1807    1808
             *

858          KK   R6N.1
859          KM        ROUTE FLOW FROM CP5 TO CP6 IN NORTH 18 MODEL
860          KM        ASSUME CHANNEL IS SAME CONFIGURATION AS ABOVE FOR PROPOSED GOLF COURSE
861          KM        CHANNEL.
862          RS       1    FLOW
863          RC    .055    .045    .055    2200    .025
864          RX       0      16      26      30      40      44      54      70
865          RY       6       2       2       0       0       2       2       6
             *

866          KK   SUB6B
867          KM        RUNOFF FROM WEST PORTION OF EXISTING SUB6N ADJACENT TO CHANNEL
868          BA    .032
869          LS              81       0
870          UK     200    .025     .15     100
871          RK    1300    .015    .025            TRAP      10       4
             *
```



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

872          KK    SR6B
873          KM        ROUTE FLOW THROUGH RETENTION BASIN IN DRIVING RANGE CHANNEL
874          RS       1    STOR       0       0
875          SV       0     .17     .57    1.12    1.78
876          SQ       0       8      10     120     380
877          SE    1772    1773    1774    1775    1776
             *

878          KK   CP6.1
879          KM        ADD HYDROGRAPHS AT CP6.1
880          HC       2
             *

881          KK   SUB1N
882          KM        RUNOFF FROM SUBBASIN 1N
883          BA    .019
884          LS              77      18
885          UK     100    .013     .15     100
886          RK    1470   .0204    .018            TRAP      50      20
             *

887          KK    R2NA
888          KM        ROUTE FLOW FROM CP1 TO CP2NA
889          RS       1    FLOW
890          RC     .03     .03     .03     400    .025
891          RX       0       8      13      17      22      26      31      39
892          RY       4       2       2       0       0       2       2       4
             *

893          KK  SUB2NA
894          KM        RUNOFF FROM SUBBASIN 2NA
895          BA    .015
896          LS              81       0
897          UK     150    .013     .15     100
898          RK    1050   .0215    .025            TRAP      20       6
             *

899          KK   CP2NA
900          KM        ADD HYDROGRAPHS AT CP2NA
901          HC       2
             *

902          KK   SR2NA
903          KM        ROUTE FLOW THROUGH DETENTION BASIN IN SUB2NA
904          RS       1    STOR       0       0
905          SV       0    .076    .291    .708     1.2
906          SQ       0       0       0       0     160
907          SE    1772    1773    1774    1775    1776
             *
```

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

 908          KK   R2NB
 909          KM        ROUTE FLOW FROM CP2NA TO CP2NB
 910          RS       1    FLOW
 911          RC     .03     .03     .03    1050    .015
 912          RX       0       8      13      17      22      26      31      39
 913          RY       4       2       2       0       0       2       2       4
              *

 914          KK  SUB2NB
 915          KM        RUNOFF FROM SUBBASIN 2NB
 916          BA     .03
 917          LS              77      53
 918          UK     150    .013     .15     100
 919          RK    1200    .015    .025            TRAP      20      50
              *

 920          KK   CP2NB
 921          KM        ADD HYDROGRAPHS AT CP2NB
 922          HC       2
              *

 923          KK   SR2NB
 924          KM        STORAGE ROUTE FLOW THROUGH DETENTION BASIN IN SUB2NB
 925          RS       1    STOR       0       0
 926          SV       0     .19     .69    1.66    3.23     4.5
 927          SQ       0       2       8      12      17     170
 928          SE    1796    1798    1800    1802    1804    1805
              *

 929          KK   RCP4N
 930          KM        ROUTE FLOW FROM CP2NB TO CP4N
 931          RS       1    FLOW
 932          RC     .03     .03     .03     740    .018
 933          RX       0       8      13      17      22      26      31      39
 934          RY       4       2       2       0       0       2       2       4
              *

 935          KK   SUB6N
 936          KM        RUNOFF FROM SUBBASIN 6 IN NORTH 18 MODEL.  TO LAKE NORTH OF CLUBHOUSE.
 937          BA    .049
 938          LS              81       0
 939          UK     200    .025     .15     100
 940          RK    1300    .015    .025            TRAP      10       4
              *

 941          KK   RET6N
 942          KM        RETENTION ROUTING THROUGH LAKE AT HOLE 18, NORTH COURSE.
 943          RS       1    STOR
 944          SV       0    3.01    6.64   10.75   13.09   15.90
 945          SQ       0       0       0      10      26     100
 946          SE    1782    1784    1786    1788    1789    1790
              *
```



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

 947          KK  RCP4N1
 948          KM        ROUTE FLOW FROM CP6N TO CP4N
 949          RS       1    FLOW
 950          RC     .03     .03     .03     550    .018
 951          RX       0       8      13      17      22      26      31      39
 952          RY       4       2       2       0       0       2       2       4
              *

 953          KK  CP4N.1
 954          KM        ADD HYDROGRAPHS AT CP4N.1
 955          HC       2
              *

 956          KK   SUB3N
 957          KM        RUNOFF FROM SUBBASIN 3N, NORTH 18 MODEL
 958          BA    .027
 959          LS              81       0
 960          UK     100     .02     .15     100
 961          RK    2800  0.0207    .025            TRAP      10       4
              *

 962          KK   RET3N
 963          KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 3.  18" PIPE OUTFLOW WILL
 964          KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
 965          RS       1    STOR       0       0
 966          SV       0    1.73    8.97   13.32   15.74
 967          SQ       0       4       7       9      11
 968          SE    1793    1795    1800    1803    1804
              *

 969          KK     R4N
 970          KM        ROUTE FLOW FROM CP3N TO CP4N IN NORTH MODEL
```

```
 971          RS       1    FLOW
 972          RC    .035    .035    .035     950    .018
 973          RX       0       8      13      17      22      26      31      39
 974          RY       4       2       2       0       0       2       2       4
              *
 975          KK  CP4N.2
 976          KM        ADD HYDROGRAPHS AT CPN.2
 977          HC       2
              *
 978          KK   SUB4N
 979          KM        RUNOFF FROM SUBBASIN 4N.
 980          BA    .032
 981          LS              77      18
 982          UK     100    .015     .15     100
 983          RK    1200   0.007    .018            TRAP      50      20
              *
1                                        HEC-1 INPUT                                                    PAGE 29

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

 984          KK    CP4N
 985          KM        ADD HYDROGRAPHS AT CP4N
 986          HC       2
              *
 987          KK     R6N
 988          KM        ROUTE FLOW FROM CP4N TO CP6N ALONG THOMPSON PEAK PKWY AT CLUBHOUSE
 989          RS       1    FLOW
 990          RC    .045    .035    .045     750    .025
 991          RX       0       8      13      17      22      26      31      39
 992          RY       4       2       2       0       0       2       2       4
              *
 993          KK   SUB6A
 994          KM        RUNOFF FROM SUBBASIN 6A (CLUBHOUSE AREA NORTH OF THOMPSON PEAK PKWY).
 995          BA    .013
 996          LS              83      68
 997          UK     100    .015     .12     100
 998          RK     800     .01    .025            TRAP       2       3
              *
 999          KK   CP6.2
1000          KM        ADD HYDROGRAPHS AT CP6.2
1001          HC       2
              *
1002          KK    CP6N
1003          KM        ADD HYDROGRAPHS AT CP6N
1004          HC       2
              *
              *       ABOVE DISCHARGE FROM NORTH 18 THROUGH BRIDGE AT TPP STATION 103+45
              *
1005          KK   RCP6N
1006          KM        ROUTE FLOW FROM CP6N TO CP3C
1007          RS       1    FLOW
1008          RC    .045    .035    .045     300    .015
1009          RX       0       8      13      17      37      45      51      59
1010          RY       4       2       2       0       0       2       2       4
              *
1011          KK   SUB3C
1012          KM        RUNOFF FROM SUBBASIN 3C, SOUTH COURSE AT MAINTENANCE FACILITY.
1013          BA   .0104
1014          LS              77      68
1015          UK     100    .025     .02     100
1016          RK     600    .015    .035            TRAP      50      20
              *
1                                        HEC-1 INPUT                                                    PAGE 30

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

1017          KK    CP3C
1018          KM        COMBINE NORTH COURSE HYDROGRAPH WITH FIRST SOUTH COURSE HYDROGRAPH
1019          HC       2
              *
1020          KK     R3C
1021          KM        ROUTE FLOW FROM SUB3C TO CP3 THROUGH GC1018
1022          KM        ASSUME CHANNEL IS SAME CONFIGURATION AS ABOVE FOR PROPOSED GOLF COURSE
1023          KM        CHANNEL.
1024          RS       1    FLOW
1025          RC    .055    .045    .055    2050    .025
1026          RX       0      20      30      40      60      70      80     100
1027          RY    1650    1746    1744    1742    1742    1744    1746    1750
              *
1028          KK  GC1018
1029          KM        RUNOFF FROM HOLES NO. 10, 18 AND DRIVING RANGE THAT CONTRIBUTE TO WASH
```

```
1030        BA    .044
1031        LS              81        0
1032        UK     200    .025      .15      100
1033        RK    1800   .0233     .025              TRAP       10        4
            *

1034        KK   GC1-9
1035        KM        RUNOFF FROM GOLF COURSE HOLES 1 & 9 CONTRIBUTING TO WASH
1036        BA    .026
1037        LS              81        0
1038        UK     200    .025      .15      100
1039        RK    2110    .022     .025              TRAP       10        4
            *

1040        KK   SUB3S
1041        KM        RUNOFF FROM SUB BASIN 3 SOUTH COURSE
1042        BA   .0102
1043        LS              77       53
1044        UK     100    .010      .15      100
1045        RK     930    .016     .025              TRAP       50       20
            *

1046        KK    CP3S
1047        KM        COMBINE HYDROGRAPHS AT CP3 SOUTH COURSE
1048        HC       4
            *

1049        KK    RT3S
1050        KM        ROUTE FLOW FROM CP3S TO CPGC28
1051        RS       1    FLOW       0        0
1052        RC    .055    .045     .055      900     .023
1053        RX       0      20       30       40       60       70       80      100
1054        RY    1750    1746     1744     1742     1742     1744     1746     1750
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1055        KK   SUB4S
1056        KM        RUNOFF FROM SUB BASIN 4 SOUTH COURSE
1057        BA   .0273
1058        LS              77       53
1059        UK     100    .010      .15      100
1060        RK    1780    .018     .015              TRAP       50       20
            *

1061        KK    RT4S
1062        KM        ROUTE FLOW FROM CP4S TO CPGC28
1063        RS       1    FLOW       0        0
1064        RC    .035    .035     .035      650     .015
1065        RX       0      20       30       40       45       55       65       75
1066        RY    1750    1746     1744     1742     1742     1744     1746     1750
            *

1067        KK   GC2-8
1068        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES NO. 2 AND 8
1069        BA    .014
1070        LS              81        0
1071        UK     200    .025      .15      100
1072        RK     980    .016     .025              TRAP       10        4
            *

1073        KK  1PGC28
1074        KM        ADD HYDROGRAPHS AT CPGC28 AT PROPOSED LOOP ROAD, SOUTH COURSE
1075        HC       3
            *

1076        KK  SUB3D3
1077        KM        RUNOFF FROM GRAYHAWK ROAD SOUTH OF THOMPOSON PEAK
1078        BA    .014
1079        LS              81        0
1080        UK      50    .015       .1      100
1081        RK    2450    .016     .025              TRAP        5        4
            *

1082        KK  CPGC28
1083        KM        ADD HYDROGRAPHS AT CPGC28 AT PROPOSED LOOP ROAD, SOUTH COURSE
1084        HC       2
            *

1085        KK  SRGC28
1086        KM        STORAGE THRU DETENTION BASIN ON HOLES 2 AND 8.
1087        RS       1    STOR       0        0
1088        SV       0    .018     .085      .22       .5      1.0      1.7     2.68      3.9
1089        SE    1706    1707     1708     1709     1710     1711     1712     1713     1714
1090        SQ       0      10       18       20       30      108      324      651     1070
            *
```



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

```
1091          KK    RT7S
1092          KM        ROUTE FLOW FROM SRGC28 TO CP7S
1093          RS       1    STOR       0       0
1094          RC    .055    .045    .055    1700   .0187
1095          RX       0      20      30      40      60      70      80     100
1096          RY    1750    1746    1744    1742    1742    1744    1746    1750
              *

1097          KK     GC7
1098          KM        RUNOFF FROM SOUTH GOLF COURSE HOLE NO. 7
1099          BA   .0134
1100          LS              81       0
1101          UK     200    .025     .15     100
1102          RK    1380    .020    .025            TRAP      10       4
              *

1103          KK    CP7S
1104          KM        ADD HYDROGRAPHS AT CP7S ON SOUTH COURSE
1105          HC       2  0.6083
              *

1106          KK    D7ST
1107          KM        D7ST IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1108          KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1109          KM
1110          KM        DIVERT 100% OF FLOW
1111          DT    B7ST
1112          DI       0   10000
1113          DQ       0   10000
              *

1114          KK   CLEAR
1115          KM        CLEAR HYDROGRAPHS FROM THE STACK.
1116          HC       2
              *
              *
              * THIS PORTION OF MODEL TAKEN FROM,"DRAINAGE REPORT FOR VILLAGE 3 - PHASE 1",
              * APPROVED BY THE CITY OF SCOTTSDALE 7-19-95.  MODIFIED TO ACCOUNT FOR ASBUILT
              * CONDITION
              *
              *
              *
              *

1117          KK  SUB3D1
1118          KM        RUNOFF FROM SUBBASIN 3D1, PARCEL 3D.
1119          BA   .0088
1120          LS              77      34
1121          UD     .06
              *
```



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

1122          KK   RD1B1
1123          KM        FOUTE FLOW FROM 3D1 TO 3B1
1124          RS       1    FLOW      -1
1125          RC    0.03    0.03    0.03    1250    .015
1126          RX       0     0.5       1       7      12      19    19.5      20
1127          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1128          KK  SUB3B1
1129          KM        RUNOFF FROM SUBBASIN 3B1, PARCEL 3B.
1130          BA   .0137
1131          LS              77      47
1132          UD     .06
              *

1133          KK   CP3B1
1134          KM        ADD HYDROGRAGHS AT CP3B1
1135          HC       2
              *

1136          KK   RB13F
1137          KM        ROUTE FLOW FROM 3B1 TO SUB3F
1138          RS       1    FLOW      -1
1139          RC    0.03    0.03    0.03    2150    .015
1140          RX       0     0.5       1       7      17      24    24.5      25
1141          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1142          KK   SUB3F
1143          KM        RUNOFF FROM SUBBASIN 3F, PARCEL 3F, SOUTH COURSE MODEL.
1144          BA   .0344
1145          LS              77      68
1146          UK     100    .025     .15     100
1147          RK    1000    .015    .025            TRAP     100      20
              *

1148          KK    CP3F
1149          KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3F ALONG THE POWER CORRIDOR
```

```
1150          HC       2
              *

1151          KK  SUB3B2
1152          KM        RUNOFF FROM SUBBASIN 3B2, PARCEL 3B.
1153          BA   .0246
1154          LS              77       40
1155          UD     .10
              *

1156          KK   RB2E1
1157          KM        1/2 OF ENTIRE ROUTING REACH FROM 3B2 TO CP3E1
1158          RS       1    FLOW      -1
1159          RC    0.03    0.03    0.03     800    0.02
1160          RX       0     0.5       1       7      17      24    24.5      25
1161          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *
1                                          HEC-1 INPUT                                                    PAGE 34

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

1162          KK   RB2E2
1163          KM        SECOND 1/2 OF ENTIRE ROUTING REACH FROM 3B2 TO CP3E1
1164          RS       1    FLOW      -1
1165          RC    0.03    0.03    0.03     600    .015
1166          RX       0     0.5       1       7      17      24    24.5      25
1167          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1168          KK  SUB3E1
1169          KM        RUNOFF FROM SUBBASIN 3E1, PARCEL 3E.
1170          BA   .0246
1171          LS              77       40
1172          UD     .10
              *

1173          KK  1CPE31
1174          KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3E1 ALONG THE POWER CORRIDOR
1175          HC       2
              *

1176          KK  SUB3D2
1177          KM        RUNOFF FROM SUBBASIN 3D2, PARCEL 3D.
1178          BA    .022
1179          LS              77       35
1180          UD     .08
              *

1181          KK   RD2E2
1182          KM        ROUTE EXCESS FROM 3D2 TO CP3E2
1183          RS       1    FLOW      -1
1184          RC    0.03    0.03    0.03    1200   .0216
1185          RX       0     0.5       1       7      17      24    24.5      25
1186          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1187          KK  SUB3E2
1188          KM        RUNOFF FROM SUBBASIN 3E2, PARCEL 3E.
1189          BA    .012
1190          LS              77       35
1191          UD     .06
              *

1192          KK   CP3E2
1193          KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3E2 ALONG THE POWER CORRIDOR
1194          HC       2
              *

1195          KK     PC3
1196          KM        PC3 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
1197          KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
1198          KM
1199          KM        RUNOFF FROM SUBBASIN PC3.
1200          BA  0.0434
1201          LS              77       10
1                                          HEC-1 INPUT                                                    PAGE 35

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

1202          UK     300    .015     .15     100
1203          RK    2200     .01     .03            TRAP      30       4
              *

1204          KK    CPC3
1205          KM        CPC3 IS A CONCENTRATION POINT ADDED BY GVSCE TO ESTIMATE THE INFLOW TO
1206          KM        THE POWER LINE CHANNEL AT THE HAYDEN ROAD CROSSING.
1207          KM
1208          KM        COMBINE ROUTED HYDROGRAPH FROM SRPC2 W/HYDROGRAPHS FROM CP3E1, CP3E2 AND
1209          KM        CP3F AND RUNOFF FROM PC3.
1210          HC       4  0.1835
              *
```

```
1211        KK   DPC3T
1212        KM        DPC3T IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1213        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1214        KM
1215        KM        DIVERT 100% OF FLOW
1216        DT   BPC3T
1217        DI        0   10000
1218        DQ        0   10000
            *

1219        KK  SUB3E3
1220        KM        RUNOFF FROM SUBBASIN 3E3, PARCEL 3E.
1221        BA    .020
1222        LS              77       32
1223        UD     .06
            *

1224        KK     PC4
1225        KM        PC4 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
1226        KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
1227        KM
1228        KM        RUNOFF FROM SUBBASIN PC4.
1229        BA  0.0217
1230        LS              77        0
1231        UK     300    .015     .15     100
1232        RK    1100     .01     .03            TRAP      30       4
            *

1233        KK     D7S
1234        KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1235        KM        LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1236        KM
1237        KM        RETRIEVE DIVERTED FLOW
1238        DR    B7ST
            *

1239        KK    CPC4
1240        KM        THE HEC1 OPREATION TEMPAD IS CHANGED BY GVSCE TO ESTIMATE THE INFLOW TO
1241        KM        THE POWER LINE CHANNEL WHERE THE FLOW FROM CP7S ENTERS THE CHANNEL.
1242        KM
1243        KM        COMBINE HYDROGRAPH FROM CP3E3 W/RUNOFF FROM PC4.
1244        HC        3   0.650
            *
```



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

1245        KK   DPC4T
1246        KM        DPC3T IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1247        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1248        KM
1249        KM        DIVERT 100% OF FLOW
1250        DT   BPC4T
1251        DI        0   10000
1252        DQ        0   10000
            *

1253        KK   CLEAR
1254        KM        CLEAR HYDROGRAPHS FROM THE STACK.
1255        HC        3
            *
            *
            *        THIS ENDS THE PORTION OF THE MODEL TAKEN FROM DRAINAGE REPORT
            *        FOR VILLAGE 3 - PHASE I HEC-1 MODEL BY GILBERTSON ASSOC. INC.
            *        DATED 7-19-95
            *
            *
            *
            * RETURN TO NORTH 18\VILLAGE 2\TPP3 MODEL.
            * THE REMAINDER OF THE SUBBASINS IN THIS  MODEL  WILL CONTRIBUTE TO THE
            * PROPOSED CHANNNEL IN THE POWER EASEMENT AS IDENTIFIED IN THE
            * "COMMUNITY DRAINAGE STUDY - CORE NORTH AND WILL DISCHARGE TO REGIONAL
            * RETENTION BASIN 38R1.
            *
            *

1256        KK    37AW     RET
1257        KM        RETRIEVE DIVERTED FLOW FROM SOUTH BOUNDARY OF SUB 37A TO REFLECT
1258        KM        BREAK IN DEER VALLEY ROAD CHANNEL BETWEEN HAYDEN & PIMA ROADS
1259        DR    37AW
            *

1260        KK    R14R
1261        KM        ROUTE FLOW FROM DIVERT AT DEER VALLEY ROAD (UPSTREAM OF SUBBAIN 5) TO
1262        KM        RET14.1
1263        RS        1    FLOW
1264        RC    .055    .045    .055    2900     .01
1265        RX       0      16      26      30      50      54      64      80
1266        RY       6       2       2       0       0       2       2       6
            * RET 141 HAS BEEN REVISED FOLLOWING REFINEMENT OF GRADING PLANS 11-16-94
            *
```

```
1267          KK  RET141
1268          KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 14.1.  18" PIPE OUTFLOW WILL
1269          KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1270          RS       1    STOR       0       0
1271          SV       0     .46    2.79    4.56    5.71    6.92    8.24
1272          SQ       0      11      15      22     147     463     968
1273          SE    1778    1785    1790    1792    1793    1794    1795
              *
1                                          HEC-1 INPUT                                          PAGE 37

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


1274          KK   R14.1
1275          KM        ROUTE FLOW FROM RET14.1 TO CP14
1276          KM        RET14.1
1277          RS       1    FLOW
1278          RC    .055    .045    .055    1900     .01
1279          RX       0      16      26      30      50      54      64      80
1280          RY       6       2       2       0       0       2       2       6
              *

1281          KK  SUB13N
1282          KM        RUNOFF FROM SUBBASIN 13 NORTH 18 MODEL.
1283          BA    .037
1284          LS              77      24
1285          UK     100    .015     .15     100
1286          RK    2400    .007    .018            TRAP      50      20
              *

1287          KK   R14.1
1288          KM        ROUTE FLOW FROM CP13 TO RET14 NORTH 18 MODEL.
1289          RS       1    FLOW
1290          RC    .055    .045    .055     950    .025
1291          RX       0       8      13      17      22      26      31      39
1292          RY       4       2       2       0       0       2       2       4
              *

1293          KK  SUB14N
1294          KM        RUNOFF FROM SUBBASIN 14 NORTH 18 MODEL.
1295          BA    .049
1296          LS              81       0
1297          UK     300    .025     .15     100
1298          RK    2300     .01    .025            TRAP      10       4
              *

1299          KK    CP14
1300          KM        ADD HYDROGRAPHS AT CP14
1301          HC       3  0.5595
              *

1302          KK   RET14
1303          KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 14.  18" PIPE OUTFLOW WILL
1304          KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1305          RS       1    STOR       0       0
1306          SV       0     .08     .31    1.01    2.16    3.20    4.19    5.69     7.8
1307          SQ       0      14      16      18      20      22     155     464     750
1308          SE    1744    1746    1748    1750    1752    1753    1754    1755    1756
              *

1309          KK   R18.1
1310          KM        ROUTE FLOW FROM RET14 TO CP18
1311          RS       1    FLOW
1312          RC    .055    .045    .055     500    .016
1313          RX       0      16      26      34      54      68      78      96
1314          RY       6       2       2       0       0       2       2       6
              *
1                                          HEC-1 INPUT                                          PAGE 38

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


1315          KK  SUB20N
1316          KM        RUNOFF FROM SUBBASIN 20.
1317          BA    .024
1318          LS              77      24
1319          UK     200     .01     .15     100
1320          RK    1400     .02    .018            TRAP      50      20
              *

1321          KK     R19
1322          KM        ROUTE FLOW FROM CP20 TO CP19
1323          RS       1    FLOW
1324          RC    .035    .035    .035     700     .02
1325          RX       0       8      13      17      22      26      31      39
1326          RY       4       2       2       0       0       2       2       4
              *

1327          KK  SUB19N
1328          KM        RUNOFF FROM SUBBASIN 19.
1329          BA    .038
1330          LS              77      31
1331          UK     150     .01     .15     100
```

```
1332        RK    1800    .015    .018            TRAP      50      20
            *

1333        KK   CP19N
1334        KM        ADD HYDROGRAPHS  AT CP19N
1335        HC       2
            *

1336        KK   R18NC
1337        KM        ROUTE FLOW FROM  CP19N TO CP18NC
1338        RS       1    FLOW
1339        RC    .035    .035    .035     700    .013
1340        RX       0       8      13      17      27      31      36      44
1341        RY       4       2       2       0       0       2       2       4
            *

1342        KK  UB18NC
1343        KM        RUNOFF FROM SUBBASIN 18NC.
1344        BA    .021
1345        LS              77      42
1346        UK     100     .01     .15     100
1347        RK    1550     .02    .018            TRAP      50      20
            *

1348        KK  CP18NC
1349        KM        ADD HYDROGRAPHS  AT CP18NC (INCLUDES R18.1, R18, AND SUB18)
1350        HC       3
            *
```

1 HEC-1 INPUT PAGE 39

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

1351        KK    RPC1
1352        KM        ROUTE FLOW FROM CP18N TO CPC1.
1353        RS       1    FLOW
1354        RC    .035    .035    .035     510    .013
1355        RX       0      16      26      34      64      78      88     106
1356        RY       6       2       2       0       0       2       2       6
            *

1357        KK  UB18NA
1358        KM        RUNOFF FROM SUBBASIN 18NA.
1359        BA    .022
1360        LS              77      42
1361        UK     100     .01     .15     100
1362        RK    1450     .02    .018            TRAP      50      20
            *

1363        KK   1RPC1
1364        KM        ROUTE FLOW FROM CP18NA TO CPC1.
1365        RS       1    FLOW
1366        RC    .035    .035    .035    2550     .01
1367        RX       0      16      26      34      64      78      88     106
1368        RY       8       4       2       0       0       2       4       8
            *

1369        KK  UB18NB
1370        KM        RUNOFF FROM SUBBASIN 18NB.
1371        BA   .0096
1372        LS              77      42
1373        UK     100     .01     .15     100
1374        RK     800     .02    .018            TRAP      50      20
            *

1375        KK   2RPC1
1376        KM        ROUTE FLOW FROM CP18NB TO CPC1.
1377        RS       1    FLOW
1378        RC    .035    .035    .035    2000     .01
1379        RX       0      16      26      34      64      78      88     106
1380        RY       8       4       2       0       0       2       4       8
            *

1381        KK     PC1
1382        KM        RUNOFF FROM SUBBASIN PC1.
1383        BA    .062
1384        LS              77      10
1385        UK     500    .015     .15     100
1386        RK    2700     .01     .03            TRAP      30       4
            *

1387        KK   1CPC1
1388        KM        ADD HYDROGRAPHS  AT CPC1.
1389        HC       3
            *
```

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

1390        KK   SRPC1
1391        KM        STOAGE ROUTE THROUGH DET BASIN IN POWER CORRIDOR.
1392        RS       1    STOR       0       0
```

```
1393        SV       0      .29      .73
1394        SQ       0        0      350
1395        SE    1747     1748     1749
            *

1396        KK    CPC1
1397        KM        ADD HYDROGRAPHS  AT CPC1.
1398        HC       2
            *

1399        KK  R16NA1
1400        KM        ROUTE FLOW FROM CPC1 TO C16NA1.
1401        RS       1     FLOW
1402        RC    .035     .035     .035      700     .013
1403        RX       0       16       26       34       74       88       98      116
1404        RY       8        4        2        0        0        2        4        8
            *

1405        KK  UB16NA
1406        KM        RUNOFF FROM SUBBASIN 16NA.
1407        BA   .0139
1408        LS              77       42
1409        UK     100    .015      .15      100
1410        RK    1500    .015     .022             TRAP      50       20
            *

1411        KK  R16NA1
1412        KM        ROUTE FLOW FROM CP16NA TO CP16NA1.
1413        RS       1     FLOW
1414        RC    .035     .035     .035      550     .013
1415        RX       0       16       26       34       44       58       68       86
1416        RY       6        2        2        0        0        2        2        6
            *

1417        KK  C16NA1
1418        KM        ADD HYDROGRAPHS  AT CP16NA1.
1419        HC       2
            *

1420        KK  R16NB1
1421        KM        ROUTE FLOW FROM CP16NA1 TO CP16NB1.
1422        RS       1     FLOW
1423        RC    .035     .035     .035      650     .013
1424        RX       0       16       26       34       74       88       98      116
1425        RY       8        4        2        0        0        2        4        8
            *
```



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

1426        KK  UB16NB
1427        KM        RUNOFF FROM SUBBASIN 16NB.
1428        BA   .0156
1429        LS              77       42
1430        UK     100    .015      .15      100
1431        RK    1500    .015     .022             TRAP      50       20
            *

1432        KK  R16NB1
1433        KM        ROUTE FLOW FROM CP16NB TO CP16NB1.
1434        RS       1     FLOW
1435        RC    .035     .035     .035      550     .013
1436        RX       0       16       26       34       44       58       68       86
1437        RY       6        2        2        0        0        2        2        6
            *

1438        KK  C16NB1
1439        KM        ADD HYDROGRAPHS  AT CP16NB1.
1440        HC       2
            *

1441        KK  R16NC1
1442        KM        ROUTE FLOW FROM CP16NB1 TO CP16NC1.
1443        RS       1     FLOW
1444        RC    .035     .035     .035      650     .013
1445        RX       0       16       26       34       54       68       78       96
1446        RY       6        2        2        0        0        2        2        6
            *

1447        KK   SUB7N
1448        KM        RUNOFF FROM SUBBASIN 7N.
1449        BA    .031
1450        LS              77       18
1451        UK     100    .015      .15      100
1452        RK    1900     .01     .018             TRAP      50       20
            *

1453        KK    R8NC
1454        KM        ROUTE FLOW FROM CP7N TO CP8NC.
1455        RS       1     FLOW
1456        RC    .055     .045     .055      700     .025
1457        RX       0        8       13       17       22       26       31       39
```

```
1458        RY      4       2       2       0       0       2       2       4
            *

1459        KK  SUB8NA
1460        KM        RUNOFF FROM SUBBASIN 8NA.
1461        BA   .0046
1462        LS              81       0
1463        UK     100     .03     .15     100
1464        RK     450     .03    .025            TRAP      20       6
            *
1                                          HEC-1 INPUT                                                    PAGE 42

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

1465        KK   SR8NA
1466        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NA.
1467        RS       1    STOR       0       0
1468        SV       0     .51    .816
1469        SQ       0       1      43
1470        SE    1791    1795    1796
            *

1471        KK    R8NB
1472        KM        ROUTE FLOW FROM CP8NA TO CP8NB.
1473        RS       1    FLOW
1474        RC    .025    .025    .025     300     .03
1475        RX       0      12      24      36      56      68      80      92
1476        RY       6       4       2       0       0       2       4       6
            *

1477        KK  SUB8NB
1478        KM        RUNOFF FROM SUBBASIN 8NB.
1479        BA   .0142
1480        LS              81       0
1481        UK     100     .03     .15     100
1482        RK    1150    .025    .025            TRAP      20       6
            *

1483        KK   CP8NB
1484        KM        ADD HYDROGRAPHS AT CP8NB.
1485        HC       2
            *

1486        KK   SR8NB
1487        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NB.
1488        RS       1    STOR       0       0
1489        SV       0   .0124   1.754    2.45
1490        SQ       0       2       2      72
1491        SE    1784    1785    1790    1791
            *

1492        KK    R8NC
1493        KM        ROUTE FLOW FROM CP8NB TO CP8NC.
1494        RS       1    FLOW
1495        RC    .025    .025    .025     500     .03
1496        RX       0      12      24      36      56      68      80      92
1497        RY       6       4       2       0       0       2       4       6
            *

1498        KK  SUB8NC
1499        KM        RUNOFF FROM SUBBASIN 8NC.
1500        BA   .0182
1501        LS              81       0
1502        UK     100     .03     .15     100
1503        RK     900     .03    .025            TRAP      20       6
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1504        KK   CP8NC
1505        KM        ADD HYDROGRAPHS AT CP8NC.
1506        HC       3
            *

1507        KK   SR8NC
1508        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NC.
1509        RS       1    STOR       0       0
1510        SV       0    .404   2.444    3.13   3.979
1511        SQ       0      10      14     151    1004
1512        SE    1771    1775    1780    1781    1782
            *

1513        KK     R9N
1514        KM        ROUTE FLOW FROM CP8N TO CP9N.
1515        RS       1    FLOW
1516        RC    .025    .025    .025    1150    .025
1517        RX       0       8      13      17      22      26      31      39
1518        RY       4       2       2       0       0       2       2       4
            *
```

```
1519        KK   SUB9N
1520        KM        RUNOFF FROM SUBBASIN 9N.
1521        BA    .055
1522        LS              77       28
1523        UK     100     .008      .15      100
1524        RK    1700      .01     .018              TRAP      50       20
            *

1525        KK    CP9N
1526        KM        ADD HYDROGRAPHS AT CP9N
1527        HC        2
            *

1528        KK    R10B
1529        KM        ROUTE FLOW FROM CP9N TO CP10B.
1530        RS        1     FLOW
1531        RC     .03      .03      .03      400      .02
1532        RX       0        8       16       24       29       37       45       53
1533        RY       6        4        2        0        0        2        4        6
            *

1534        KK  SUB10B
1535        KM        RUNOFF FROM SUBBASIN 10B.
1536        BA    .028
1537        LS              77       42
1538        UK     100     .015      .15      100
1539        RK     350     .008     .018              TRAP      50       20
1540        RK     600     .008     .025              TRAP      10        4
            *
```



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

1541        KK   CP10B
1542        KM        ADD HYDROGRAPHS AT CP10B
1543        HC        2
            *

1544        KK   R11NA
1545        KM        ROUTE FLOW FROM CP10B TO CP11NA.
1546        RS        1     FLOW
1547        RC     .03      .03      .03      200      .04
1548        RX       0        8       16       24       29       37       45       53
1549        RY       6        4        2        0        0        2        4        6
            *

1550        KK  UB11NA
1551        KM        RUNOFF FROM SUBBASIN 11NA.
1552        BA   .0076
1553        LS              81        0
1554        UK     100     .025      .15      100
1555        RK     500      .03     .025              TRAP      30        6
            *

1556        KK  CP11NA
1557        KM        ADD HYDROGRAPHS AT CP11NA
1558        HC        2
            *

1559        KK  SR11NA
1560        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB11NA.
1561        RS        1    STOR        0        0
1562        SV        0   .0462    1.425    2.480    3.109    3.856
1563        SQ        0      10       27       27       27      237
1564        SE     1734    1735     1740     1742     1743     1744
            *

1565        KK   R11NB
1566        KM        ROUTE FLOW FROM CP11NA TO CP11NB.
1567        RS        1     FLOW
1568        RC    .025     .025     .025      250      .03
1569        RX       0       12       24       36       56       68       80       92
1570        RY       6        4        2        0        0        2        4        6
            *

1571        KK  UB11NB
1572        KM        RUNOFF FROM SUBBASIN 11NB.
1573        BA   .0078
1574        LS              81        0
1575        UK     100      .04      .15      100
1576        RK     700     .025     .025              TRAP      30        6
            *
```



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

1577        KK  CP11NB
1578        KM        ADD HYDROGRAPHS AT CP11NB
1579        HC        2
            *
```

```
1580        KK  SR11NB
1581        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB11NB.
1582        RS       1    STOR       0       0
1583        SV       0    1.56   2.586
1584        SQ       0      27     111
1585        SE    1732    1737    1738
            *

1586        KK   R11NC
1587        KM        ROUTE FLOW FROM CP11NB TO CP11NC.
1588        RS       1    FLOW
1589        RC    .025    .025    .025     300     .03
1590        RX       0      12      24      36      56      68      80      92
1591        RY       6       4       2       0       0       2       4       6
            *

1592        KK  UB11NC
1593        KM        RUNOFF FROM SUBBASIN 11NC.
1594        BA   .0069
1595        LS              81       0
1596        UK     100     .03     .15     100
1597        RK     650    .028    .025            TRAP      20       5
            *

1598        KK  C11NC1
1599        KM        ADD HYDROGRAPHS AT CP11NC.1
1600        HC       2
            *

1601        KK  SUB10A
1602        KM        RUNOFF FROM SUBBASIN 10A.
1603        BA    .030
1604        LS              77      42
1605        UK     100    .015     .15     100
1606        RK     350    .008    .018            TRAP      50      20
1607        RK     800    .008    .025            TRAP      10       4
            *

1608        KK   R12NB
1609        KM        ROUTE FLOW FROM CP10A TO CP12NB.
1610        RS       1    FLOW
1611        RC    .025    .025    .025     400     .03
1612        RX       0      12      24      36      46      58      70      82
1613        RY       6       4       2       0       0       2       4       6
            *
```



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

1614        KK  UB12NA
1615        KM        RUNOFF FROM SUBBASIN 12NA.
1616        BA   .0153
1617        LS              81       0
1618        UK     150    .025     .15     100
1619        RK     650    .017    .025            TRAP      30       6
            *

1620        KK  SR12NA
1621        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB1NA.
1622        RS       1    STOR       0       0
1623        SV       0    2.16   3.426   5.071
1624        SQ       0       1       2     142
1625        SE    1741    1745    1746    1747
            *

1626        KK   R12NA
1627        KM        ROUTE FLOW FROM CP12NA TO CP12NB.
1628        RS       1    FLOW
1629        RC    .025    .025    .025     550    .025
1630        RX       0      12      24      36      46      58      70      82
1631        RY       6       4       2       0       0       2       4       6
            *

1632        KK  UB12NB
1633        KM        RUNOFF FROM SUBBASIN 12NB.
1634        BA   .0157
1635        LS              81       0
1636        UK     150    .025     .15     100
1637        RK     650    .017    .025            TRAP      30       6
            *

1638        KK  CP12NB
1639        KM        ADD 3 HYDROGRAPHS AT CP12NB
1640        HC       3
            *

1641        KK  SR12NB
1642        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB12NB.
1643        RS       1    STOR       0       0
1644        SV       0    .922    4.24    7.53
1645        SQ       0       2       2     142
1646        SE    1741    1745    1746    1747
```

```
                *
1647            KK  R11NC2
1648            KM        ROUTE FLOW FROM CP12NA TO CP11NC.
1649            RS      1    FLOW
1650            RC    .025    .025    .025     550     .01
1651            RX       0      12      24      36      46      58      70      82
1652            RY       6       4       2       0       0       2       4       6
                *
1                                          HEC-1 INPUT                                                          PAGE 47

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

1653            KK  CP11NC
1654            KM        ADD HYDROGRAPHS  AT CP11NC
1655            HC       2
                *

1656            KK  SR11NC
1657            KM        ROUTE FLOW THROUGH RETENTION BASIN RT11NC.  18" PIPE OUTFLOW WILL
1658            KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1659            RS       1    STOR       0       0
1660            SV       0   1.665   2.303   3.062
1661            SQ       0      27     111     344
1662            SE    1730    1735    1736    1737
                *

1663            KK   R16NC
1664            KM        ROUTE FLOW FROM CP11NC TO CP16NC.
1665            RS       1    FLOW
1666            RC    .035    .035   0.035     950    .025
1667            RX       0       8      13      17      22      26      31      39
1668            RY       4       2       2       0       0       2       2       4
                *

1669            KK  UB16NC
1670            KM        RUNOFF FROM SUBBASIN 16NC.
1671            BA   .0337
1672            LS              77      42
1673            UK     100    .015     .15     100
1674            RK    1600    .015    .022            TRAP      50      20
                *

1675            KK  CP16NC
1676            KM        ADD HYDROGRAPHS  AT CP16NC
1677            HC       2
                *

1678            KK  R16NC1
1679            KM        ROUTE FLOW FROM CP16NC TO CP16NC1.
1680            RS       1    FLOW
1681            RC     .03     .03     .03     550    .013
1682            RX       0      16      26      34      44      58      68      86
1683            RY       6       2       2       0       0       2       2       6
                *

1684            KK  C16NC1
1685            KM        ADD HYDROGRAPHS  AT CP16NC1.
1686            HC       2
                *

1687            KK   R15N1
1688            KM        ROUTE FLOW FROM CP16NC1 TO CP15N1.
1689            RS       1    FLOW
1690            RC    .035    .035    .035     600    .013
1691            RX       0      16      26      34      54      68      78      96
1692            RY       6       2       2       0       0       2       2       6
                *
1                                          HEC-1 INPUT                                                          PAGE 48

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

1693            KK     PC2
1694            KM        RUNOFF FROM SUBBASIN PC2.
1695            BA    .054
1696            LS              77      10
1697            UK     100    .015     .15     100
1698            RK    2700     .01     .03            TRAP      50       4
                *

1699            KK  CP15N1
1700            KM        ADD HYDROGRAPHS  AT CP15N1
1701            HC       2
                *

1702            KK   SRPC2
1703            KM        STORAGE ROUTE THRU DETENTION BASINS IN POWER CORRIDOR THIS IS THE TOTAL
1704            KM        FLOW REACHING THE UPSTREAM SIDE OF THE THOMPSON PEAK PARKWAY BRIDGE
1705            RS       1    STOR       0       0
1706            SV       0    1.02    2.70    4.48     5.8     6.9
1707            SQ       0       0     150     350     550     850
```

```
1708        SE    1730    1731    1732    1733    1734    1735
            *

1709        KK  UB17NA
1710        KM        RUNOFF FROM SUBBASIN SUB17NA.
1711        BA  .00979
1712        LS              81       0
1713        UK     150    .025     .05     100
1714        RK     960   .0292    .025            TRAP      30      50
            *

1715        KK  SR17NA
1716        KM        STORAGE ROUTE THROUGH DETENTION BASIN SR17NA.
1717        RS       1    STOR       0       0
1718        SV       0   .0078    .241    .523    1.00   1.735
1719        SQ       0       1       1       1    17.4     251
1720        SE  1755.2    1756    1758    1759    1760    1761
            *

1721        KK   R17NB
1722        KM        ROUTE FLOW FROM SR17NA TO CP17NB.
1723        RS       1    FLOW
1724        RC    0.03    0.03    0.03     280  0.0286
1725        RX       0      10      20      35      70      85      90     100
1726        RY    1757  1756.8  1756.6    1756    1756    1757    1758    1759
            *

1727        KK  UB17NB
1728        KM        RUNOFF FROM SUBBASIN SUB17NB.
1729        BA   .0111
1730        LS              81       0
1731        UK     150    .025     .05     100
1732        RK    1200   .0217    .025            TRAP      30      50
            *
```



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

1733        KK  CP17NB
1734        KM        ADD HYDROGRAPHS AT SUB17NB.
1735        HC       2
            *

1736        KK  SR17NB
1737        KM        STORAGE ROUTE THROUGH DETENTION BASIN SR17NB.
1738        RS       1    STOR       0       0
1739        SV       0   .0113   .1469    .635   .9795   1.509   2.254   3.243
1740        SQ       0       1       1       1       1       1    38.2     189
1741        SE  1751.5    1752    1753    1755    1756    1757    1758    1759
            *

1742        KK    R17A
1743        KM        ROUTE FLOW FROM SR17NB TO CP17A.
1744        RS       1    FLOW
1745        RC    0.03    0.03    0.03     280   0.033
1746        RX       0      15      18      20      24      27      30      35
1747        RY    1755    1754    1753    1752    1752    1753    1754    1755
            *

1748        KK  SUB17A
1749        KM        RUNOFF FROM SUBBASIN SUB17A.
1750        BA  .00792
1751        LS              77      34
1752        UK      75     .03     .05     100
1753        RK    1500     .02    .025            TRAP       8       4
            *

1754        KK  CP17A1
1755        KM        ADD HYDROGRAPHS AT CP17A1.
1756        HC       2
            *

1757        KK  UB17NC
1758        KM        RUNOFF FROM SUBBASIN SUB17NC.
1759        BA  .00559
1760        LS              77      12
1761        UK      75     .03     .05     100
1762        RK     910   .0187    .025            TRAP       8       4
            *

1763        KK   CP17A
1764        KM        ADD ALL HYDROGRAPHS AT CP17A.
1765        HC       2
            *

1766        KK    R15N
1767        KM        ROUTE FLOW FROM CP17A TO CP15N.
1768        RS       1    FLOW
1769        RC    .035    .035    .035    1950    .025
1770        RX       0       8      13      17      22      26      31      39
1771        RY       4       2       2       0       0       2       2       4
            *
```

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

1772          KK  SUB15N
1773          KM        RUNOFF FROM SUBBASIN 15N.
1774          BA   .0391
1775          LS              77      68
1776          UK     100     .01     .15     100
1777          RK     400    .008    .018            TRAP      50      20
1778          RK    1700    .015    .025            TRAP      10       4
              *

1779          KK   CP15N
1780          KM        ADD HYDROGRAPHS  AT CP15N
1781          HC       2
              *

1782          KK   R15N2
1783          KM        ROUTE FLOW FROM CP15N TO CP15N1.
1784          RS       1    FLOW                                        *
1785          RC     .02     .02     .02     700    .013
1786          RX       0       8      13      17      22      26      31      39
1787          RY       6       2       2       0       0       2       2       6
              *

1788          KK  CP15N2
1789          KM        ADD HYDROGRAPHS  AT CP15N1
1790          KM        THIS IS THE INTERIM OUTFLOW DISCHARGE TO NATURAL WASH.
1791          HC       2  1.1611
              *

1792          KK   R15N2
1793          KM        ROUTE 15N2 IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CP15N2 TO THE
1794          KM        POWER LINE CHANNEL CROSSING AT HAYDEN RD.
1795          KM
1796          KM        ROUTE FLOW FROM CP15N2 TO CPC3A.
1797          RS       1    FLOW      -1
1798          RC    .035    .035    .035    2200    .013
1799          RX       0      16      26      34      64      78      88     106
1800          RY       6       2       2       0       0       2       2       6
              *

1801          KK    DPC3
1802          KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1803          KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1804          KM
1805          KM        RETRIEVE DIVERTED FLOW
1806          DR   BPC3T
              *

1807          KK   CPC3A
1808          KM        COMBINE CPC3A IS ADDED BY GVSCE TO ESTIMATE THE TOTAL DISCHARGE AT THE
1809          KM        POWER LINE CHANNEL CROSSING AT HAYDEN RD.
1810          KM
1811          KM        COMBINE ROUTED HYDROGRAPH FROM CP15N2 WITH HYDROGRAPH FROM CPC3
1812          HC       2  1.3446
              *
```



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

1813          KK   RPC3A
1814          KM        ROUTE PC3A IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CPC3A VIA
1815          KM        THE POWER LINE CHANNEL.
1816          KM
1817          KM        ROUTE FLOW FROM CP15N2 TO CPC3A.
1818          RS       1    FLOW      -1
1819          RC    .035    .035    .035    1100    .013
1820          RX       0      16      26      34      64      78      88     106
1821          RY       6       2       2       0       0       2       2       6
              *

1822          KK    DPC4
1823          KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1824          KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1825          KM
1826          KM        RETRIEVE DIVERTED FLOW
1827          DR   BPC4T
              *

1828          KK   CPC4A
1829          KM        COMBINE CPC4A IS ADDED BY GVSCE TO ESTIMATE THE TOTAL DISCHARGE IN THE
1830          KM        POWER LINE CHANNEL
1831          KM
1832          KM        COMBINE ROUTED HYDROGRAPH FROM CPC3A WITH HYDROGRAPH FROM CPC4
1833          HC       2  1.9946
              *

1834          KK   RPC4A
1835          KM        ROUTE PC4A IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CPC4A TO THE
```

```
1836        KM        POWER LINE CHANNEL CROSSING AT HUALAPAI RD.
1837        KM
1838        KM        ROUTE FLOW FROM CPC4A TO CPC5.
1839        RS       1    FLOW      -1
1840        RC    .035    .035    .035    1900    .013
1841        RX       0      16      26      34      64      78      88     106
1842        RY       6       2       2       0       0       2       2       6
            *

1843        KK  DPC4AT
1844        KM        DIVERT PC4A IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE OUTER
1845        KM        LOOP DETENTION BASIN VIAL THE POWER LINE CHANNEL.
1846        KM
1847        KM        DIVERT 100% OF FLOW
1848        DT  BPC4AT
1849        DI       0   10000
1850        DQ       0   10000
            *

1851        KK  SUB1-2
1852        KM        RUNOFF FROM SUB 1 AND 2, SOUTH COURSE MODEL
1853        BA   .0558
1854        LS              77      68
1855        UK     200    .010     .15     100
1856        RK    1370    .027    .015            TRAP      50      20
            *
1                                        HEC-1 INPUT                                          PAGE 52

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

1857        KK  GCRB18
1858        KM        RUNOFF FROM GOLF COURSE CONTRIBUTING TO RETENTION BASIN AT HOLE NO. 18
1859        KM        AND HOLE NO. 10, SOUTH COURSE
1860        BA   .012
1861        LS              81       0
1862        UK     200    .025     .15     100
1863        RK     300    .016    .025            TRAP      10       4
            *

1864        KK  CPRET1
1865        KM        COMBINE HYDROGRAPHS AT RETENTION BASINS ON HOLE 18 & 10
1866        HC       2
            *

1867        KK   SR18S
1868        KM        STORAGE ROUTE THRU RETENTION BASIN AT HOLE 18, SOUTH COURSE
1869        RS       1    STOR       0       0
1870        SV       0  1.7635  5.7722  12.174  21.337  28.849  30.151      32
1871        SE    1725    1730    1735    1740    1745    1748    1749    1750
1872        SQ       0       0       0       0       0      42     386     900
            *

1873        KK   SUB5S
1874        KM        RUNOFF FROM SUB 5S
1875        BA   .0263
1876        LS              77      31
1877        UK     100    .010     .15     100
1878        RK    1280    .007    .015            TRAP      50      20
            *

1879        KK  GC1216
1880        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES 12, 16, AND 17
1881        BA   .0365
1882        LS              81       0
1883        UK     200    .025     .15     100
1884        RK    2200    .024    .025            TRAP      10       4
            *

1885        KK  GC1415
1886        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES 13, 14, 15 AND RETENTION
1887        BA    .045
1888        LS              81       0
1889        UK     200    .025     .15     100
1890        RK    1300    .022    .025            TRAP      10       4
            *

1891        KK   SUB6S
1892        KM        RUNOFF FROM SUB BASIN 6, SOUTH COURSE
1893        BA    .021
1894        LS              77      42
1895        UK     100    .010     .15     100
1896        RK    2150    .013    .025            TRAP      50      20
            *
1                                        HEC-1 INPUT                                          PAGE 53

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

1897        KK   SUB7S
1898        KM        RUNOFF FROM SUB BASIN 7, SOUTH COURSE
1899        BA    .027
1900        LS              77      42
```

```
1901        UK     100    .010     .15     100
1902        RK    2080    .023    .025            TRAP      50      20
            *

1903        KK  CPRET2
1904        KM        COMBINE HYDROGRAPHS AT RETENTION BASIN 2, SOUTH COURSE
1905        HC       5
            *

1906        KK  SRRET2
1907        KM        STORAGE THRU RETENTION BASIN NO. 2, SOUTH COURSE
1908        RS       1    STOR       0       0
1909        SV       0    .617   3.474   9.858  20.063  35.353  52.685  57.749      62
1910        SE    1670    1675    1680    1685    1690    1695    1699    1700    1701
1911        SQ       0       0       0       0       0       0      32     386     594
            *
            *       NO FLOW RELEASED FROM RETENTION BASIN
            *

1912        KK   CLEAR
1913        KM        THIS OPERATION IS ADDED BY GVSCE
1914        KM
1915        KM        CLEAR HYDROGRAPHS FROM THE STACK
1916        HC       2
            *

1917        KK   SUB8S
1918        KM        RUNOFF FROM SUB BASIN 8, SOUTH COURSE
1919        BA   .0256
1920        LS              77      42
1921        UK     100    .010     .15     100
1922        RK    1600    .015    .025            TRAP      50      20
            *

1923        KK   RGC36
1924        KM        ROUTE SUB8S TO CPGC36
1925        RS       1    FLOW
1926        RC    .055    .045    .055     850     .02
1927        RX       0      16      26      30      40      44      54      70
1928        RY       6       2       2       0       0       2       2       6
            *

1929        KK    GC36
1930        KM        RUNOFF FROM SOUTH COURSE HOLES 3, 6, AND NORTH HALF OF HOLE 4.
1931        BA   .0406
1932        LS              81       0
1933        UK     200    .025     .15     100
1934        RK    2350    .015    .035            TRAP      10       4
            *
```



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

1935        KK  C1GC36
1936        KM        COMBINE SUBS 8 AND GC36
1937        HC       2
            *

1938        KK   SUB9S
1939        KM        RUNOFF FROM SUB BASIN 9, SOUTH COURSE
1940        BA    .021
1941        LS              77      53
1942        UK     100    .010     .15     100
1943        RK    1100    .013    .025            TRAP      50      20
            *

1944        KK     R9S
1945        KM        ROUTE SUB9S TO CPGC36
1946        RS       1    FLOW
1947        RC    .035    .035    .035     500     .02
1948        RX       0       8      12      16      18      22      26      30
1949        RY       6       4       3       2       2       3       4       6
            *

1950        KK  CPGC36
1951        KM        COMBINE SUBS 8 AND 9 SOUTH AND GC36
1952        HC       2
            *

1953        KK  SRGC36
1954        KM        STORAGE THRU DETENTION BASIN ON GC36
1955        RS       1    STOR       0       0
1956        SV       0    0.85     1.0
1957        SE    1664    1668    1669
1958        SQ       0      20     205
            *

1959        KK   SUB7A
1960        KM        RUNOFF FROM SUB7A, SOUTH COURSE EAST SIDE ADJACENT TO PIMA ROAD
1961        BA   .0092
1962        LS              77      42
1963        UK     100    .025     .15     100
```

```
1964        RK     950    .015    .025            TRAP      50      20
            *

1965        KK    SR7A
1966        KM        STORAGE THRU DETENTION BASIN ON SUB7A
1967        RS       1    STOR       0       0
1968        SV       0     .68      .8
1969        SE    1700    1703    1704
1970        SQ       0      10     150
            *
1                                        HEC-1 INPUT                                                    PAGE 55

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

1971        KK    R10S
1972        KM        ROUTE FLOW FROM CP7A TO CP10S
1973        RS       1    FLOW
1974        RC    .035    .035    .035    1400    .015
1975        RX       0       8      12      16      18      22      26      30
1976        RY       6       4       3       2       2       3       4       6
            *

1977        KK  SUB10S
1978        KM        RUNOFF FROM SUB BASIN 10, SOUTH COURSE
1979        BA   .0248
1980        LS              77      53
1981        UK     100    .010     .15     100
1982        RK    1150    .020    .025            TRAP      50      20
            *

1983        KK   CP10S
1984        KM        COMBINE HYDROGRAPHS AT CP10 SOUTH COURSE
1985        HC       2
            *

1986        KK  SUB11S
1987        KM        RUNOFF FROM SUB11, SOUTH COURSE
1988        BA   .0234
1989        LS              77      68
1990        UK     100    .015    .018     100
1991        RK    1050    .015    .025            TRAP     100      20
            *

1992        KK    R11S
1993        KM        ROUTE 11S IS ADDED BY GVSCE TO ROUTE THE RUNOFF FROM SUB11S TO THE
1994        KM        POWER LINE CHANNEL CROSSING AT HUALAPAI DR ALONG HUALAPAI DR.
1995        KM
1996        KM        ROUTE FLOW FROM SUB11S TO CPC5.
1997        RS       1    FLOW      -1
1998        RC    .035    .035    .035     900    .015
1999        RX       0       8      12      16      18      22      26      30
2000        RY       6       4       3       2       2       3       4       6
            *

2001        KK   C10SA
2002        KM        COMBINE 10SA IS ADDED BY GVSCE
2003        KM
2004        KM        COMBINE ROUTED HYDROGRAPH FROM 11S WITH HYDROGRAPH FROM CP10S
2005        HC       2
            *

2006        KK   R10SA
2007        KM        ROUTE 10SA IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE OUTER
2008        KM        LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
2009        KM
2010        KM        ROUTE FLOW FROM C10SAS TO CPC5.
2011        RS       1    FLOW      -1
2012        RC    .035    .035    .035     900    .015
1                                        HEC-1 INPUT                                                    PAGE 56

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

2013        RX       0       8      12      16      18      22      26      30
2014        RY       6       4       3       2       2       3       4       6
            *

2015        KK    GC45
2016        KM        RUNOFF FROM SOUTH COURSE HOLES 4 AND 5
2017        BA   .0127
2018        LS              81       0
2019        UK     200    .015    .025     100
2020        RK     550    .015    .035            TRAP      10       4
            *

2021        KK     PC5
2022        KM        PC5 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
2023        KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
2024        KM
2025        KM        RUNOFF FROM SUBBASIN PC5.
2026        BA  0.0375
2027        LS              77       0
2028        UK     300    .015     .15     100
```

```
2029        RK    1900     .01     .03            TRAP      30       4
            *

2030        KK   DPC4A
2031        KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
2032        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
2033        KM
2034        KM        RETRIEVE DIVERTED FLOW
2035        DR  BPC4AT
            *

2036        KK    CPC5
2037        KM        COMBINE PC5 IS ADDED BY GVSCE TO ESTIMATE THE TOTAL FLOW IN THE POWER
2038        KM        LINE CHANNEL AT THE HUALAPAI CROSSING
2039        KM
2040        KM        COMBINE ROUTED HYDROGRAPH FROM C10SA AND CPC4A WITH HYDROGRAPHS FROM
2041        KM        CGC45, SRGC36 AND PC5
2042        HC       6  2.1022
            *
            *     ******************  END GREYHAWK WATERSHED  ******************
            *

2043        KK     RC5
2044        KM       ROUTE CPC5 THROUGH SUBBASIN CN5C TO OUTER LOOP BASIN
2045        RS       1    FLOW      -1
2046        RC    .035    .035    .035    2000    .013
2047        RX       0      16      26      34      64      78      88     106
2048        RY       6       2       2       0       0       2       2       6
            *
1                                          HEC-1 INPUT                                          PAGE 57

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

2049        KK   SCN5D
2050        KM     RUNOFF FROM SUBBASIN CN5D
2051        BA  0.0499
2052        LS              74       0
2053        UK     100   0.025    0.13     100
2054        RK    3100   0.017    0.04            TRAP       0      15
            *

2055        KK    CN5D
2056        KM        COMBINE ROUTED HYDROGRAPH FROM CPC5 W/RUNOFF FROM SCN5D
2057        HC       2
            *

2058        KK     D52
2059        KM     BRING BACK DIVERTED HYDROGRAPH FROM R52
2060        DR    B52T
            *

2061        KK    S53A
2062        KM     RUNOFF FROM SUBBASIN 53A
2063        BA  0.1794
2064        LS              74      11
2065        UK     300   0.022    0.13     100
2066        RK    1475   0.026   0.045  0.0111    TRAP       3       5
2067        RK    1750   0.021    0.04            TRAP      25       5
            *

2068        KK     C53
2069        KM     COMBINE ROUTED HYDROGRAPH FROM FROM C52 WITH RUNOFF FROM SUBBASIN 53A
2070        HC       2  8.0954
            *
            *    R53
            *   ****  TOO SHORT TO ROUTE  ****
            *    NORMAL DEPTH CHANNEL ROUTE FROM C53 TO C53A1 THROUGH PIMA CHANNEL
            *       1    FLOW      -1
            *  0.022   0.022   0.022    1550    0.01
            *   1000    1012    1020    1028    1058    1066    1074    1086
            *    107     104     102     100     100     102     104     107
            *

2071        KK   S53A1
2072        KM     RUNOFF FROM SUBBASIN 53A1
2073        BA  0.3376
2074        LS              74      12              74      30
2075        UK     300   0.022    0.13      70
2076        UK     150   0.027    0.13      30
2077        RK    1250   0.023   0.045  0.0087    TRAP       4       5
2078        RK    5050   0.017    0.04            TRAP      35       5
            *
1                                          HEC-1 INPUT                                          PAGE 58

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

2079        KK   C53A1
2080        KM     COMBINE ROUTED HYDROGRAPH FROM C53 WITH RUNOFF FROM SUBBASSIN 53A1
2081        HC       2  8.4330
            *
```

```
2082        KK   SCN6B
2083        KM     RUNOFF FROM SUBBASIN CN6B (WATER CAMPUS)
2084        KM      TOTAL AREA = 0.0542 sm, 0.0022 sm OF THAT IS NON-CONTRIBUTING
2085        BA  0.0520
2086        LS              74       80              74        0
2087        UK     150    0.01     0.15       70
2088        UK     100   0.025     0.13       30
2089        RK     720    0.02     0.03   0.0084    TRAP        5       10
2090        RK     700    0.01    0.045   0.0050    TRAP        0       10
2091        RK     440   0.009    0.035             TRAP        6        3
            *

2092        KK    C53A
2093        KM     COMBINE HYDROGRAPH FROM C53A WITH RUNOFF FROM SUBBASIN CN6B
2094        HC       2
            *

2095        KK   SCN6D
2096        KM     RUNOFF FROM SUBBASIN CN6D
2097        KM      TOTAL AREA = 0.0398 sm, 0.0029 sm OF THAT IS NON-CONTRIBUTING
2098        BA  0.0369
2099        LS              74        3
2100        UK     100   0.025     0.13      100
2101        RK    1000   0.017     0.04             TRAP        0       15
            *

2102        KK    CP6D
2103        KM     COMBINE HYDROGRAPHS FROM C53A W/RUNOFF FROM SCN6D
2104        HC       2
            *

2105        KK   SCN6C
2106        KM     RUNOFF FROM SUBBASIN CN6C (CAP TREATMENT PLANT AND WATER CAMPUS)
2107        KM      TOTAL AREA = 0.1526 sm, 0.0138 sm OF THAT IS NON-CONTRIBUTING
2108        BA  0.1388
2109        LS              74       80              74        0
2110        UK     150    0.01     0.15       50
2111        UK     100   0.025     0.13       50
2112        RK    1500    0.01     0.03   0.0123    TRAP        5       10
2113        RK     700   0.017     0.04             TRAP        0       15
            *

2114        KK    CP6C
2115        KM        COMBINE HYDROGRAPH FROM CP6D W/RUNOFF FROM SCN6C
2116        HC       2
            *
```

1 HEC-1 INPUT PAGE 59

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

2117        KK    CP5D
2118        KM        COMBINE HYDROGRAPHS FROM CP6C AND CP5D
2119        HC       2
            *

2120        KK   SCN5C
2121        KM     RUNOFF FROM SUBBASIN CN5C
2122        BA  0.1904
2123        LS              74        0
2124        UK     150   0.020     0.13      100
2125        RK    3700  0.0176     0.04             TRAP        0       15
            *

2126        KK   SCN6E
2127        KM     RUNOFF FROM SUBBASIN CN6E
2128        BA  0.0427
2129        LS              74        5
2130        UK      50    0.01     0.13      100
2131        RK    3200   0.002    0.025             TRAP        0       50
            *

2132        KK    PIMA
2133        KM     COMBINE HYDROGRAPH FROM CP5D WITH W/RUNOFF FROM SCN5C AND SCN6E
2134        HC       3
            *

2135        KK   SCNA1     SUB
2136        KM         RUNOFF FROM SUB CNA1
2137        BA  0.1099
2138        LS              77
2139        UK     300   0.015     0.13      100
2140        RK    1900   0.015     0.04             TRAP        0       20
            *
2141        KM   ************************************************************
2142        KM   ************ BEGIN GILBERTSON GRAYHAWK VILLAGE *****************
2143        KM   ************************************************************
            *
            *

2144        KK      1G
2145        KM
2146        KM        NOTE: ALL HEC-1 DATA FOR SUB-BASINS 1G THROUGH 1L ARE TAKEN FROM
```

```
2147    KM          GILBERTSON ASSOCIATES MODEL UDPLAN.DAT, AS PUBLISHED IN THE
2148    KM          AUGUST 1995 REPORT TITLED "UNIT DRAINAGE PLAN, GRAYHAWK VILLAGE 1"
2149    KM          THE GILBERTSON MODEL USED SCS UNIT HYDROGRAPH METHODOLOGY.
2150    KM
2151    KM          THE CITY OF SCOTTSDALE HAS REQUIRED GILBERTSON ASSOCIATES TO RE-DO
2152    KM          THIS MODEL WITH KINEMATIC WAVE METHOGOLOGY IN ORDER TO BE
2153    KM          CONSISTENT WITH ALL PREVIOUS MODELING EFFORTS FOR THIS AREA.
2154    KM          AS OF 10/18/95, GILBERTSON ASSOCIATES HAS NOT COMPLIED WITH THIS
2155    KM          REQUEST.  ACCORDINGLY, THE UNIT HYDROGRAPH DATA WILL BE USED FOR
2156    KM          THE REFERENCED SUB-BASINS UNTIL THIS REVISED MODELING DATA IS
2157    KM          AVAILABLE.
2158    KM       EXCESS RUNOFF FROM SUBAREA 1G
1                                   HEC-1 INPUT                                    PAGE 60

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

2159    BA    .059
2160    LS              74      53
2161    UD     .06
        *

2162    KK   DET1G
2163    KM       DETENTION FOR PARCEL 1G
2164    RS       1    STOR       0
2165    SV       0     4.8
2166    SQ       0      26
2167    SE       0       3
2168    ST       3      15     2.8     1.5
        *

2169    KK   R1GI1
2170    KM       ROUTE DET1G TO THOMPSON PEAK PARKWAY
2171    KM       TRAPEZOIDAL CHANNEL PER 76TH STREET PLANS
2172    KM                     SIDE SLOPE = 3:1 (H:V)
2173    KM                     MAX DEPTH  = 1.6 FT.
2174    KM                     BOT.WIDTH  = 8.0 FT.
2175    RS       1    FLOW      -1
2176    RC   0.025   0.025   0.025    1400   0.017
2177    RX       0     0.5     1.0     5.8    13.8    18.6      19    19.5
2178    RY     1.8     1.7     1.6       0       0     1.6     1.7     1.8
        *

2179    KK      1I
2180    KM       EXCESS RUNOFF FROM SUBAREA 1I
2181    BA    .062
2182    LS              74      52
2183    UD     .07
        *

2184    KK   DET1I
2185    KM       DETENTION FOR SUBAREA 1I
2186    RS       1    STOR       0
2187    SV       0     4.0
2188    SQ       0      39
2189    SE       0       3
2190    ST       3      15     2.8     1.5
        *

2191    KK   CP1I1
2192    KM       COMBINE HYDROGRAPHS FROM R1GI1 AND DET1I
2193    HC       2
        *

2194    KK      1J
2195    KM       EXCESS RUNOFF FROM SUBAREA 1J
2196    BA   .0175
2197    LS              74      64
2198    UD     .06
        *
1                                   HEC-1 INPUT                                    PAGE 61

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

2199    KK   DET1J
2200    KM       DETENTION FOR SUBAREA 1J
2201    RS       1    STOR       0
2202    SV       0     2.1
2203    SQ       0      11
2204    SE       0       3
2205    ST       3      15     2.8     1.5
        *

2206    KK   R1JI2
2207    KM       ROUTE DET1J TO 76TH STREET (WEST)
2208    KM       TRIANGULAR CHANNEL PER PLANS (1661-E-94)
2209    KM                     SIDE SLOPE = 4:1 (H:V)
2210    KM                     MAX DEPTH  = 3.0 FT.
2211    RS       1    FLOW      -1
2212    RC    .025    .025    .025    1400    .005
2213    RX       0     0.5     1.0    12.9      13      25    25.5      26
2214    RY     3.2     3.1     3.0       0       0     3.0     3.1     3.2
        *
```

```
2215        KK   CP1I2
2216        KM        COMBINE HYDROGRAPHS FROM DET1J AND 1I
2217        HC       2
            *

2218        KK   R1IL1
2219        KM        ROUTE 1I TO 1L
2220        KM        TRAPEZOIDAL CHANNEL PER 76TH STREET PLANS
2221        KM                        SIDE SLOPE = 3:1 (H:V)
2222        KM                        MAX DEPTH  = 3.5 FT.
2223        KM                        BOT.WIDTH  = 8.0 FT.
2224        RS       1     FLOW      -1
2225        RC     .03      .03      .03      730     .015
2226        RX       0      0.5      1.0     11.5     19.5      30     30.5      31
2227        RY     3.7      3.6      3.5        0        0     3.5      3.6     3.7
            *

2228        KK      1L
2229        KM        EXCESS RUNOFF FROM SUBAREA 1L
2230        BA   .0484
2231        LS              74       64
2232        UD    .217
            *

2233        KK   CP1L1
2234        KM        COMBINE HYDROGRAPHS FROM 1L AND R1IL1
2235        HC       2
            *
2236        KM   ************************************************************
2237        KM   ************ END GILBERTSON GRAYHAWK VILLAGE ******************
2238        KM   ************************************************************
            *
```



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

2239        KK     RA2
2240        KM        ROUTE FLOW THROUGH SUBBASIN CNA2 FROM GRAYHAWK
2241        KM        TRAPEZOIDAL CHANNEL B=20 Z=10
2242        RS       2    FLOW      -1
2243        RC    .050   0.025    .050    4200  0.0167
2244        RX       0      10      20      60      80     120     130     140
2245        RY       6       5       4       0       0       4       5       6
            *
            *

2246        KK   SCNA2     SUB
2247        KM         RUNOFF FROM SUB CNA2
2248        BA  0.1859
2249        LS              77
2250        UK     250  0.0167    0.13     100
2251        RK    3900  0.0167    0.04            TRAP       0      15
            *

2252        KK     CA2
2253        KM        COMBINE ROUTED HYDROGRAPH FROM CP1L1 W/RUNOFF FROM CNA2
2254        HC       2
            *

2255        KK    CPA2
2256        KM        COMBINE RUNOFF FROM CNA1 WITH HYDROGRAPH FROM CA2
2257        HC       2
            *

2258        KK   SCNA3     SUB
2259        KM         RUNOFF FROM SUB CNA3
2260        BA  0.2027
2261        LS              77
2262        UK     300  0.0179    0.13     100
2263        RK    5300  0.0179    0.04            TRAP       0      20
            *

2264        KK    CPA3
2265        KM        COMBINE HYDROGRAPH CPA2 W/RUNOFF FROM SCNA3
2266        HC       2
            *

2267        KK   SCNA4     SUB
2268        KM         RUNOFF FROM SUB CNA4
2269        BA  0.1459
2270        LS              77
2271        UK     200   0.015    0.13     100
2272        RK    4500  0.0181    0.04            TRAP       0      15
            *
```



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

2273        KK    CPA4
2274        KM        COMBINE HYDROGRAPH CPA3 W/RUNOFF FROM SCNA4
```

```
2275          HC       2
              *

2276          KK   SCNA5     SUB
2277          KM         RUNOFF FROM SUB CNA5
2278          BA  0.0678
2279          LS              77       5
2280          UK      50    0.01    0.13     100
2281          RK    5000   0.002   0.025            TRAP       0      50
              *

2282          KK  MILLER
2283          KM        COMBINE HYDROGRAPH FROM CPA4 W/RUNOFF FROM SCNA5
2284          HC       2
              *

2285          KK  OLDB-I
2286          KM
2287          HC       2
              *

2288          KK  OLDB-O
2289          KM        OUTER LOOP BASIN LOCATED NORTH OF THE LOOP 101 FREEWAY
2290          KM        (2) 108" CONCRETE OUTLET CULVERTS
2291          RS       1    STOR      -1       0
2292          SV       0    8.44   20.76   38.23   77.47  239.71  263.87
2293          SQ       0     400     800    1200    1600    2000    2068
2294          SE  1590.0  1593.7  1595.8  1599.3  1603.8  1608.0  1609.0
              *
2295          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    25        S30N
                V
                V
    34        R30N
                .
                .
    40          .       S31.1
                .           .
                .           .
    48      C31.1............
                .
                .
    51          .       S34.2
                .           .
                .           .
    60      C34.2............
                .
                .
    63          .        S35N
                .           .
                .           .
    75          .           .-------  D35NL
    71          .       D35NR
                .           V
                .           V
    78          .       R35NR
                .           .
                .           .
    85          .           .       S36.2
                .           .           .
                .           .           .
    93          .       C36.2............
                .           .
                .           .
   100          .           .-------> D36.2L
    96          .      D36.2R
                .           V
                .           V
   103          .      R36.2R
                .           .
                .           .
   110          .           .       S34.1
                .           .           .
                .           .           .
   119          .       C34.1............
                .           .
                .           .
   122      HVDB-I............
                V
                V
   125      HVDB-O
                V
                V
   138       R34.1
                .
                .
```

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144          .      S36.1
             .          .
             .          .
151      C36.1............
             V
             V
154      R36.1
             .
             .
162          .          .<-------   D35NL
160          .      B35NL
             .          V
             .          V
163          .      R35NL
             .          .
             .          .
172          .          .          .<-------  D36.2L
170          .          .     B36.2L
             .          .          V
             .          .          V
173          .          .     R36.2L
             .          .          .
             .          .          .
180          .          .          .      S36R1A
             .          .          .          .
             .          .          .          .
188      C36R1A..................................
             .
             .
193          .     S36R1B
             .          .
             .          .
201      C36R1B...........
             .
             .
204          .     S36R2A
             .          .
             .          .
211      C36R2A...........
             V
             V
214      R36R2A
             .
             .
226          .     S36R2B
             .          .
             .          .
233      C36R2B...........
             .
             .
236          .      S51.1
             .          .
             .          .
244      DVDB-I...........
             V
             V
247      DVDB-O
             .
             .
262          .-------> B51.1T
260      D51.1T
             .
             .
265          .       52D4
             .          V
             .          V
271          .      52D4R
             .          .
             .          .
274          .          .      52D4B
             .          .          .
             .          .          .
280          .     52D5C1............
             .          .
             .          .
283          .          .      52D5A
             .          .          V
             .          .          V
289          .          .     52D5AR
             .          .          .
             .          .          .
292          .     52D5C2............
             .          V
             .          V
295          .      52D5R
             .          .
             .          .
298          .          .       52C3
             .          .          V
             .          .          V
304          .          .      52C3R
             .          .          .
             .          .          .
```

```
307          .          .          .       52C3B
             .          .          .          .
             .          .          .          .
313          .          .     2C3BC1............
             .          .          .
             .          .          .
316          .     2C3BC2............
             .          V
             .          V
319          .     52C3BR
             .          .
             .          .
322          .          .        51C
             .          .          .
             .          .          .
330          .          .          .-------> 51C1DV
328          .          .     51C1D
             .          .          V
             .          .          V
333          .          .     51C1R
             .          .          .
             .          .          .
336          .          .          .       52C1
             .          .          .          .
             .          .          .          .
342          .          .     52C1C............
             .          .          V
             .          .          V
345          .          .     52C1R
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348          .          .          .       52C2A
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             .          .          .          .
354          .          .     52C2AC...........
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357          .          .          .       52C2B
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             .          .          .          .
363          .          .     52C2BC...........
             .          .          V
             .          .          V
366          .          .     52C2BR
             .          .          .
             .          .          .
369          .          .          .       52C2C
             .          .          .          .
             .          .          .          .
375          .          .     52C2CC...........
             .          .          V
             .          .          V
378          .          .     52C2R
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381          .          .          .       52C4
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387          .          .     52C4C1...........
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390          .     52C4C2............
             .          V
             .          V
393          .     52C4R
             .          .
             .          .
396          .          .     52C13
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404          .          .          .-------> STORM
402          .          .     2C13DV
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407          .          .          .       52C15
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413          .          .     2C15C1...........
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416          .     2C15C2............
             .          V
             .          V
419          .     52C15R
             .          .
             .          .
422          .          .     52C14A
             .          .          .
             .          .          .
428          .     2C14AC............
             .          V
             .          V
431          .     2C14AR
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436                  .<-------  51C1DV
434            51C1DV
                     .
                     .
439                  .------->  51C2DV
437            51C2D
                     V
                     V
442            51C2R
                     .
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445                  .        52C5
                     .          .
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451            52C5C............
                     V
                     V
454            52C5R
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457                  .        52C6
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463            52C6C............
                     V
                     V
466            52C6R
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471                  .           .<-------  51C2DV
469                  .      51C2DV
                     .          V
                     .          V
472                  .      51C3R
                     .          .
                     .          .
475                  .          .        51B
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                     .          .          .
483                  .          .          .------->  51B1DV
481                  .          .      51B1D
                     .          .          V
                     .          .          V
486                  .          .      51B1R
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489                  .          .          .        52C7
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495                  .      52C7C......................
                     .          V
                     .          V
498                  .      52C7R
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503                  .          .          .<-------  51B1DV
501                  .          .     51B1DV
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506                  .          .          .------->  51B2DV
504                  .          .      51B2D
                     .          .          V
                     .          .          V
509                  .          .      51B2R
                     .          .          .
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512                  .          .          .        52C8
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518                  .          .      52C8C............
                     .          .          V
                     .          .          V
521                  .          .      52C8R
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524                  .     52C9C1............
                     .          V
                     .          V
527                  .     52C9R1
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530                  .          .        52C9
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536                  .     52C9C2............
                     .          V
                     .          V
539                  .     52C9R2
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542            2C10C1............
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                 .          .          V
                 .          .          V
545              .          .     2C10R1
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548              .          .          .       52C10
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                 .          .          .          .
554              .          .     2C10C2...........
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557              .          .          .       52C11
                 .          .          .          V
                 .          .          .          V
563              .          .          .      2C11R1
                 .          .          .          .
                 .          .          .          .
568              .          .          .          .          .<-------   STORM
566              .          .          .          .      52C13D
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569              .          .          .      52C11C...........
                 .          .          .          V
                 .          .          .          V
572              .          .          .      2C11CR
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575              .          .     2C11C2...........
                 .          .          V
                 .          .          V
578              .          .     2C11R2
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581              .          .          .       52C12
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587              .          .     52C12C...........
                 .          .          V
                 .          .          V
590              .          .     52C12R
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593              .          .          .      52C14B
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599              .          .     C14BC1...........
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602              .     C14BC2...........
                 .          V
                 .          V
605              .     52C14R
                 .          .
                 .          .
610              .          .          .<-------  51B2DV
608              .          .     51B2DV
                 .          .          .
                 .          .          .
613              .          .          .-------> 51B3DV
611              .          .      51B3D
                 .          .          V
                 .          .          V
616              .          .      51B3R
                 .          .          .
                 .          .          .
619              .          .          .        52B1
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                 .          .          .          .
625              .          .      52B1C...........
                 .          .          V
                 .          .          V
628              .          .      52B1R
                 .          .          .
                 .          .          .
633              .          .          .          .<-------  51B3DV
631              .          .          .      51B3DV
                 .          .          .          .
                 .          .          .          .
636              .          .          .          .-------> 51B4DV
634              .          .          .       51B4D
                 .          .          .          V
                 .          .          .          V
639              .          .          .      51B4R1
                 .          .          .          .
                 .          .          .          .
642              .          .     52B2C1...........
                 .          .          V
                 .          .          V
645              .          .     52B2R1
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648              .          .          .        52B2
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654                 52B2C2............
                        V
                        V
657                 52B2R2
                        V
                        V
660                 52B3R1
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663                     .        52B3
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669                 52B3C2............
                        V
                        V
672                 52B3R2
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675                     .        52B4
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681                 52B4C............
                        V
                        V
684                 52B4R
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687                     .        52B5
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693                 52B5C1............
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696           52B5C2............
                  V
                  V
699           52B5R
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                  .
704                     .<-------  51B4DV
702                 51B4DV
                        .
                        .
707                     .-------> 51B5DV
705                 51B5D
                        V
                        V
710                 51B5R
                        .
                        .
715                     .          .<-------  51B5DV
713                     .      51B5DV
                        .          .
                        .          .
718                     .          .-------> 51B6DV
716                     .      51B6D
                        .          V
                        .          V
721                     .      51B6R
                        .          .
                        .          .
726                     .          .          .<-------  51B6DV
724                     .          .      51B6DV
                        .          .          .
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729                     .          .          .-------> 51B7DV
727                     .          .      51B7D
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                        .          .          V
732                     .          .      51B7R1
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735                 51B7C........................
                        V
                        V
738                 51B7R2
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741                     .        52B6
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747                 52B6C............
                        V
                        V
750                 52B6R
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753                     .        52B7
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759                 52B7C1............
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762          .      52B7C2............
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765          .              52A2
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771          .      52A2C2............
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776          .                  .<-------  51B7DV
774          .          51B7DV
             .              V
             .              V
777          .          51B8R
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780          .                      52A1
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786          .          52A1C............
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791          .                          .<-------  B51.1T
789          .                      D51.1
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792          .          C52A............
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796          .      C52............
             .        V
             .        V
800          .      R52
             .
808          .      .------->   B52T
806          .    D52T
             .
811     CLEAR............
             .
814          .      37A
             .
831          .      .--------   37AW
820          .    37AE
             .        V
             .        V
834          .    37AE1
             .
841          .          SUB5N
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848          .    CP5N............
             .        V
             .        V
851          .    RET5N
             .        V
             .        V
858          .    R6N.1
             .
866          .          SUB6B
             .              V
             .              V
872          .          SR6B
             .
878          .    CP6.1............
             .
881          .          SUB1N
             .              V
             .              V
887          .          R2NA
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893          .                      SUB2NA
             .                        .
             .                        .
899          .          CP2NA............
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             .              V
902          .          SR2NA
             .              V
             .              V
908          .          R2NB
             .
914          .                      SUB2NB
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920                 CP2NB............
                       V
                       V
923                 SR2NB
                       V
                       V
929                 RCP4N
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935                    .        SUB6N
                       .           V
                       .           V
941                    .        RET6N
                       .           V
                       .           V
947                    .       RCP4N1
                       .           .
953                 CP4N.1...........
                       .
956                    .        SUB3N
                       .           V
                       .           V
962                    .        RET3N
                       .           V
                       .           V
969                    .         R4N
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975                 CP4N.2...........
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978                    .        SUB4N
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984                 CP4N............
                       V
                       V
987                  R6N
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993                    .        SUB6A
                       .           .
999                 CP6.2............
                       .
1002             CP6N............
                    V
                    V
1005             RCP6N
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1011                SUB3C
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1017             CP3C............
                    V
                    V
1020              R3C
                    .
1028                GC1018
                       .
1034                   .        GC1-9
                       .           .
1040                   .           .        SUB3S
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1046             CP3S...................................
                    V
                    V
1049             RT3S
                    .
1055                SUB4S
                       V
                       V
1061                RT4S
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1067                   .        GC2-8
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1073          1PGC28........................
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1076                SUB3D3
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1082          CPGC28............
                 V
                 V
1085          SRGC28
                 V
                 V
1091           RT7S
                 .
                 .
1097             .          GC7
                 .           .
                 .           .
1103           CP7S............
                 .
                 .
1111             .-------->   B7ST
1106           D7ST
                 .
                 .
1114      CLEAR............
                 .
                 .
1117          SUB3D1
                 V
                 V
1122           RD1B1
                 .
                 .
1128             .       SUB3B1
                 .           .
                 .           .
1133           CP3B1............
                 V
                 V
1136           RB13F
                 .
                 .
1142             .        SUB3F
                 .           .
                 .           .
1148           CP3F............
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                 .
1151             .       SUB3B2
                 .           V
                 .           V
1156             .        RB2E1
                 .           V
                 .           V
1162             .        RB2E2
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1168             .           .      SUB3E1
                 .           .         .
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1173             .      1CPE31............
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                 .           .
1176             .           .      SUB3D2
                 .           .          V
                 .           .          V
1181             .           .       RD2E2
                 .           .         .
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1187             .           .         .      SUB3E2
                 .           .         .          .
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1192             .           .      CP3E2............
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                 .           .         .
1195             .           .         .        PC3
                 .           .         .          .
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1204           CPC3.................................
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                 .
1216             .-------->   BPC3T
1211          DPC3T
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1219             .       SUB3E3
                 .           .
                 .           .
1224             .           .         PC4
                 .           .         .
                 .           .         .
1238             .           .         .          .<-------    B7ST
1233             .           .         .        D7S
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1239             .        CPC4........................
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1250            .          .          .-------->  BPC4T
1245            .          .      DPC4T
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1253        CLEAR.......................
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1259            .          .<-------   37AW
1256            .       37AW
                .          V
                .          V
1260            .       R14R
                .          V
                .          V
1267            .     RET141
                .          V
                .          V
1274            .      R14.1
                .          .
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1281            .          .     SUB13N
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                .          .          V
1287            .          .      R14.1
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1293            .          .          .      SUB14N
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                .          .          .          .
1299            .       CP14.......................
                .          V
                .          V
1302            .      RET14
                .          V
                .          V
1309            .      R18.1
                .          .
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1315            .          .     SUB20N
                .          .          V
                .          .          V
1321            .          .        R19
                .          .          .
                .          .          .
1327            .          .          .      SUB19N
                .          .          .          .
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1333            .          .      CP19N............
                .          .          V
                .          .          V
1336            .          .      R18NC
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                .          .          .
1342            .          .          .      UB18NC
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                .          .          .          .
1348            .     CP18NC.......................
                .          V
                .          V
1351            .      RPC1
                .          .
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1357            .          .     UB18NA
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1363            .          .      1RPC1
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1369            .          .          .      UB18NB
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1375            .          .          .      2RPC1
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                .          .          .          .
1381            .          .          .          .         PC1
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1387            .          .      1CPC1........................
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1390            .          .      SRPC1
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1396            .      CPC1............
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                .          V
1399            .     R16NA1
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1405            .          .     UB16NA
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1411                    V
                   R16NA1
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1417          C16NA1............
                   V
                   V
1420          R16NB1
                   .
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1426                   UB16NB
                        V
                        V
1432                   R16NB1
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                        .
1438          C16NB1............
                   V
                   V
1441          R16NC1
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                   .
1447                    SUB7N
                        V
                        V
1453                     R8NC
                        .
                        .
1459                            SUB8NA
                                     V
                                     V
1465                            SR8NA
                                     V
                                     V
1471                             R8NB
                                     .
                                     .
1477                                     SUB8NB
                                             .
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1483                            CP8NB............
                                     V
                                     V
1486                            SR8NB
                                     V
                                     V
1492                             R8NC
                                     .
                                     .
1498                                     SUB8NC
                                             .
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1504                    CP8NC........................
                        V
                        V
1507                   SR8NC
                        V
                        V
1513                     R9N
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1519                            SUB9N
                                     .
                                     .
1525                    CP9N............
                        V
                        V
1528                    R10B
                        .
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1534                            SUB10B
                                     .
                                     .
1541                   CP10B............
                        V
                        V
1544                   R11NA
                        .
                        .
1550                            UB11NA
                                     .
                                     .
1556                  CP11NA............
                        V
                        V
1559                  SR11NA
                        V
                        V
1565                   R11NB
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                        .
1571                            UB11NB
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1577                CP11NB............
                         V
                         V
1580                SR11NB
                         V
                         V
1586                 R11NC
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1592                              UB11NC
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                                       .
1598                C11NC1............
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1601                              SUB10A
                                       V
                                       V
1608                               R12NB
                                       .
                                       .
1614                                            UB12NA
                                                     V
                                                     V
1620                                            SR12NA
                                                     V
                                                     V
1626                                             R12NA
                                                     .
                                                     .
1632                                                            UB12NB
                                                                     .
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1638                              CP12NB......................
                                       V
                                       V
1641                              SR12NB
                                       V
                                       V
1647                              R11NC2
                                       .
                                       .
1653                CP11NC............
                         V
                         V
1656                SR11NC
                         V
                         V
1663                 R16NC
                         .
                         .
1669                              UB16NC
                                       .
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1675                CP16NC............
                         V
                         V
1678                R16NC1
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1684           C16NC1............
                    V
                    V
1687            R15N1
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1693                   PC2
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1699           CP15N1............
                    V
                    V
1702            SRPC2
                    .
                    .
1709                UB17NA
                         V
                         V
1715                SR17NA
                         V
                         V
1721                 R17NB
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1727                              UB17NB
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1733                CP17NB............
                         V
                         V
1736                SR17NB
                         V
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1742                V
                  R17A
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1748                .        SUB17A
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1754              CP17A1.........
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1757                .        UB17NC
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1763              CP17A.........
                    V
                    V
1766              R15N
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1772                .        SUB15N
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1779              CP15N.........
                    V
                    V
1782              R15N2
                    .
1788          CP15N2.........
                V
                V
1792          R15N2
                .
1806                .<-------   BPC3T
1801              DPC3
                    .
1807          CPC3A.........
                V
                V
1813          RPC3A
                .
1827                .<-------   BPC4T
1822              DPC4
                    .
1828          CPC4A.........
                V
                V
1834          RPC4A
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1848            .-------> BPC4AT
1843          DPC4AT
                .
1851            SUB1-2
                    .
1857                .        GCRB18
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1864            CPRET1.........
                    V
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1867             SR18S
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1873                .        SUB5S
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1879                .           .     GC1216
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1885                .           .        .     GC1415
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1891                .           .        .        .      SUB6S
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1897                .           .        .        .        .      SUB7S
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1903                .        CPRET2.......................................
                    .           V
                    .           V
1906                .        SRRET2
                    .           .
1912            CLEAR.........
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1917          SUB8S
                V
              V
1923          RGC36
                .
1929            .          GC36
                .            .
1935          C1GC36...........
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1938            .        SUB9S
                .          V
1944            .          V
                .         R9S
                .            .
1950          CPGC36...........
                V
              V
1953          SRGC36
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1959            .        SUB7A
                .          V
1965            .          V
                .        SR7A
                .          V
1971            .          V
                .        R10S
                .            .
1977            .            .      SUB10S
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1983            .        CP10S...........
                .            .
1986            .            .      SUB11S
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1992            .            .          V
                .            .       R11S
                .            .          .
2001            .        C10SA...........
                .          V
2006            .          V
                .        R10SA
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2015            .            .       GC45
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2021            .            .          .        PC5
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2035            .            .          .          .        .<-------- BPC4AT
2030            .            .          .          .      DPC4A
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2036          CPC5.......................................................
                V
              V
2043          RC5
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2049          SCN5D
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                .
2055          CN5D...........
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2060                .<-------    B52T
2058          D52
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2061            .        S53A
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2068          C53...........
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2071            .        S53A1
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2079          C53A1...........
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2082            .        SCN6B
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2092  .  .  .  C53A...........
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2095  .  .  .     .     SCN6D
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2102  .  .  .  CP6D...........
      .  .  .     .
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2105  .  .  .     .     SCN6C
      .  .  .     .        .
      .  .  .     .        .
2114  .  .  .  CP6C...........
      .  .  .     .
      .  .  .     .
2117  .  .  CP5D...........
      .  .  .
      .  .  .
2120  .  .  .  SCN5C
      .  .  .     .
      .  .  .     .
2126  .  .  .     .     SCN6E
      .  .  .     .        .
      .  .  .     .        .
2132  .  .  PIMA........................
      .  .  .
      .  .  .
2135  .  .  .  SCNA1
      .  .  .     .
      .  .  .     .
2144  .  .  .     .        1G
      .  .  .     .        V
      .  .  .     .        V
2162  .  .  .     .     DET1G
      .  .  .     .        V
      .  .  .     .        V
2169  .  .  .     .     R1GI1
      .  .  .     .        .
      .  .  .     .        .
2179  .  .  .     .        .        1I
      .  .  .     .        .        V
      .  .  .     .        .        V
2184  .  .  .     .        .     DET1I
      .  .  .     .        .        .
      .  .  .     .        .        .
2191  .  .  .     .     CP1I1...........
      .  .  .     .        .
      .  .  .     .        .
2194  .  .  .     .        .        1J
      .  .  .     .        .        V
      .  .  .     .        .        V
2199  .  .  .     .        .     DET1J
      .  .  .     .        .        V
      .  .  .     .        .        V
2206  .  .  .     .        .     R1JI2
      .  .  .     .        .        .
      .  .  .     .        .        .
2215  .  .  .     .     CP1I2...........
      .  .  .     .        V
      .  .  .     .        V
2218  .  .  .     .     R1ILI
      .  .  .     .        .
      .  .  .     .        .
2228  .  .  .     .        .        1L
      .  .  .     .        .        .
      .  .  .     .        .        .
2233  .  .  .     .     CP1L1...........
      .  .  .     .        V
      .  .  .     .        V
2239  .  .  .     .       RA2
      .  .  .     .        .
      .  .  .     .        .
2246  .  .  .     .        .     SCNA2
      .  .  .     .        .        .
      .  .  .     .        .        .
2252  .  .  .     .       CA2...........
      .  .  .     .        .
      .  .  .     .        .
2255  .  .  .  CPA2...........
      .  .  .     .
      .  .  .     .
2258  .  .  .     .     SCNA3
      .  .  .     .        .
      .  .  .     .        .
2264  .  .  .  CPA3...........
      .  .  .     .
      .  .  .     .
2267  .  .  .     .     SCNA4
      .  .  .     .        .
      .  .  .     .        .
2273  .  .  .  CPA4...........
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 2276          .          .          .          .       SCNA5
               .          .          .          .          .
               .          .          .          .          .
 2282          .          .          .     MILLER............
               .          .          .          .
               .          .          .          .
 2285          .          .     OLDB-1............
               .          .          V
               .          .          V
 2288          .          .     OLDB-O

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*     Lahey F77L-EM/32 version 5.01 *
*       Dodson & Associates, Inc.   *
*  RUN DATE  03/25/98  TIME  13:53:49 *
*************************************
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```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 551-1748          *
*                                   *
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PIMA ROAD THREE BASINS                          File:  ULTMT-6.IH1
by  Stantech for the City of Scottsdale       Original: 08-07-97     mcg
    Project:  28900051

100-YEAR, 6-HOUR STORM
    10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
    10% LEVEL DESIGN FOR DEER VALLEY DETENTION BASIN ALTERNATIVE 3
    10% LEVEL DESIGN FOR OUTER LOOP DETENTION BASIN ALTERNATIVE 1B

    ULTIMATE CONDITION --- POWER LINE CHANNEL:
      GRAYHAWK RUNOFF RELEASED TO NATURAL WASHES ARE COLLECTED IN THE
      "POWER LINE CHANNEL" AND ROUTED TO THE OUTER LOOP DETENTION BASIN.
      THE ULTIMATE LOCATION AND GEOMETRY OF THE POWER LINE CHANNEL WILL
      BE DETERMINED BY OTHERS.

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

    IT        HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        720  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     3    0  ENDING DATE
                   NDTIME       1155  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.08 HOURS
                   TOTAL TIME BASE   59.92 HOURS

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

 19 JD        INDEX STORM NO. 1
                    STRM        0.00  PRECIPITATION DEPTH
                    TRDA        0.01  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN

 20 JD        INDEX STORM NO. 2
                    STRM        0.00  PRECIPITATION DEPTH
                    TRDA        0.10  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN

 21 JD        INDEX STORM NO. 3
                    STRM        0.00  PRECIPITATION DEPTH
                    TRDA        0.50  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN

 22 JD        INDEX STORM NO. 4
                    STRM        0.00  PRECIPITATION DEPTH
                    TRDA        1.00  TRANSPOSITION DRAINAGE AREA
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 0 PI            PRECIPITATION PATTERN

23 JD          INDEX STORM NO. 5
                     STRM        0.00  PRECIPITATION DEPTH
                     TRDA        5.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN

24 JD          INDEX STORM NO. 6
                     STRM        0.00  PRECIPITATION DEPTH
                     TRDA       25.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	S30N	1227.	3.33	128.	32.	13.	0.65		
+	ROUTED TO	R30N	1126.	3.42	128.	32.	13.	0.65		
+	HYDROGRAPH AT	S31.1	395.	3.33	43.	11.	4.	0.27		
+	2 COMBINED AT	C31.1	1508.	3.33	171.	43.	17.	0.92		
	HYDROGRAPH AT									

+	S34.2	691.	3.33	73.	18.	7.	0.44
2 COMBINED AT							
+	C34.2	2177.	3.33	243.	61.	25.	1.36
HYDROGRAPH AT							
+	S35N	1298.	3.25	108.	27.	11.	0.55
DIVERSION TO							
+	D35NL	567.	3.25	47.	12.	5.	0.55
HYDROGRAPH AT							
+	D35NR	731.	3.25	60.	15.	6.	0.55
ROUTED TO							
+	R35NR	586.	3.33	60.	15.	6.	0.55
HYDROGRAPH AT							
+	S36.2	400.	3.25	34.	9.	3.	0.21
2 COMBINED AT							
+	C36.2	906.	3.25	94.	24.	10.	0.54
DIVERSION TO							
+	D36.2L	231.	3.25	9.	2.	1.	0.54
HYDROGRAPH AT							
+	D36.2R	675.	3.25	85.	21.	9.	0.54
ROUTED TO							
+	R36.2R	482.	3.67	85.	21.	9.	0.54
HYDROGRAPH AT							
+	S34.1	1831.	3.33	190.	48.	19.	1.16
2 COMBINED AT							
+	C34.1	1896.	3.33	273.	69.	28.	1.54
2 COMBINED AT							
+	HVDB-I	4015.	3.33	512.	130.	52.	2.90
ROUTED TO							
+	HVDB-O	142.	6.50	139.	119.	52.	2.90
ROUTED TO							
+	R34.1	142.	6.58	139.	119.	52.	2.90
HYDROGRAPH AT							
+	S36.1	159.	3.42	19.	5.	2.	0.14
2 COMBINED AT							
+	C36.1	250.	3.42	154.	123.	54.	3.04
ROUTED TO							
+	R36.1	249.	3.50	154.	123.	54.	3.04
HYDROGRAPH AT							
+	B35NL	567.	3.25	47.	12.	5.	0.55
ROUTED TO							
+	R35NL	351.	3.58	47.	12.	5.	0.55
HYDROGRAPH AT							
+	B36.2L	231.	3.25	9.	2.	1.	0.54
ROUTED TO							
+	R36.2L	103.	3.58	9.	2.	1.	0.54
HYDROGRAPH AT							
+	S36R1A	652.	3.50	89.	23.	9.	0.63
4 COMBINED AT							
+	C36R1A	1236.	3.50	295.	159.	68.	4.05
HYDROGRAPH AT							
+	S36R1B	649.	3.42	83.	21.	8.	0.59
2 COMBINED AT							
+	C36R1B	1811.	3.50	375.	179.	76.	4.64
HYDROGRAPH AT							
+	S36R2A	280.	3.17	21.	5.	2.	0.13
2 COMBINED AT							
+	C36R2A	1869.	3.50	392.	184.	78.	4.77
ROUTED TO							
+	R36R2A	1869.	3.58	392.	184.	78.	4.77
HYDROGRAPH AT							
+	S36R2B	264.	3.42	33.	8.	3.	0.24
2 COMBINED AT							

+	C36R2B	2025.	3.58	424.	192.	82.	5.01
HYDROGRAPH AT							
+	S51.1	1058.	3.50	162.	41.	16.	1.13
2 COMBINED AT							
+	DVDB-I	2973.	3.58	578.	230.	97.	6.14
ROUTED TO							
+	DVDB-O	261.	6.75	259.	220.	97.	6.14
DIVERSION TO							
+	B51.1T	261.	6.75	259.	220.	97.	6.14
HYDROGRAPH AT							
+	D51.1T	0.	0.08	0.	0.	0.	6.14
HYDROGRAPH AT							
+	52D4	116.	3.25	11.	3.	1.	0.07
ROUTED TO							
+	52D4R	106.	3.25	11.	3.	1.	0.07
HYDROGRAPH AT							
+	52D4B	70.	3.17	6.	1.	1.	0.02
2 COMBINED AT							
+	52D5C1	161.	3.25	17.	4.	2.	0.09
HYDROGRAPH AT							
+	52D5A	79.	3.17	6.	2.	1.	0.02
ROUTED TO							
+	52D5AR	75.	3.17	6.	2.	1.	0.02
2 COMBINED AT							
+	52D5C2	217.	3.25	23.	6.	2.	0.12
ROUTED TO							
+	52D5R	216.	3.25	23.	6.	2.	0.12
HYDROGRAPH AT							
+	52C3	24.	3.08	2.	0.	0.	0.01
ROUTED TO							
+	52C3R	23.	3.17	2.	0.	0.	0.01
HYDROGRAPH AT							
+	52C3B	53.	3.08	4.	1.	0.	0.02
2 COMBINED AT							
+	2C3BC1	74.	3.17	6.	1.	1.	0.02
2 COMBINED AT							
+	2C3BC2	270.	3.17	29.	7.	3.	0.14
ROUTED TO							
+	52C3BR	261.	3.25	29.	7.	3.	0.14
HYDROGRAPH AT							
+	51C	166.	3.17	15.	4.	1.	0.10
DIVERSION TO							
+	51C1DV	111.	3.17	10.	3.	1.	0.10
HYDROGRAPH AT							
+	51C1D	55.	3.17	5.	1.	0.	0.10
ROUTED TO							
+	51C1R	53.	3.25	5.	1.	0.	0.10
HYDROGRAPH AT							
+	52C1	69.	3.17	5.	1.	0.	0.03
2 COMBINED AT							
+	52C1C	106.	3.17	10.	2.	1.	0.06
ROUTED TO							
+	52C1R	101.	3.25	10.	2.	1.	0.06
HYDROGRAPH AT							
+	52C2A	35.	3.17	2.	1.	0.	0.02
2 COMBINED AT							
+	52C2AC	125.	3.25	12.	3.	1.	0.08
HYDROGRAPH AT							
+	52C2B	56.	3.17	4.	1.	0.	0.03
2 COMBINED AT							
+	52C2BC	170.	3.17	16.	4.	2.	0.11
ROUTED TO							

+		52C2BR	168.	3.25	16.	4.	2.	0.11
	HYDROGRAPH AT							
+		52C2C	46.	3.08	4.	1.	0.	0.01
	2 COMBINED AT							
+		52C2CC	194.	3.25	20.	5.	2.	0.12
	ROUTED TO							
+		52C2R	180.	3.25	20.	5.	2.	0.12
	HYDROGRAPH AT							
+		52C4	56.	3.17	4.	1.	0.	0.02
	2 COMBINED AT							
+		52C4C1	211.	3.25	24.	6.	2.	0.14
	2 COMBINED AT							
+		52C4C2	472.	3.25	53.	13.	5.	0.28
	ROUTED TO							
+		52C4R	462.	3.25	53.	14.	5.	0.28
	HYDROGRAPH AT							
+		52C13	69.	3.08	5.	1.	0.	0.02
	DIVERSION TO							
+		STORM	40.	3.08	4.	1.	0.	0.02
	HYDROGRAPH AT							
+		2C13DV	29.	3.08	1.	0.	0.	0.02
	HYDROGRAPH AT							
+		52C15	157.	3.08	13.	3.	1.	0.05
	2 COMBINED AT							
+		2C15C1	186.	3.08	13.	3.	1.	0.05
	2 COMBINED AT							
+		2C15C2	546.	3.17	66.	17.	7.	0.32
	ROUTED TO							
+		52C15R	544.	3.25	66.	17.	7.	0.32
	HYDROGRAPH AT							
+		52C14A	142.	3.17	11.	3.	1.	0.04
	2 COMBINED AT							
+		2C14AC	655.	3.17	78.	20.	8.	0.36
	ROUTED TO							
+		2C14AR	637.	3.17	78.	20.	8.	0.36
	HYDROGRAPH AT							
+		51C1DV	111.	3.17	10.	3.	1.	0.10
	DIVERSION TO							
+		51C2DV	30.	3.17	3.	1.	0.	0.10
	HYDROGRAPH AT							
+		51C2D	81.	3.17	7.	2.	1.	0.10
	ROUTED TO							
+		51C2R	78.	3.25	7.	2.	1.	0.10
	HYDROGRAPH AT							
+		52C5	40.	3.17	3.	1.	0.	0.02
	2 COMBINED AT							
+		52C5C	109.	3.17	10.	3.	1.	0.06
	ROUTED TO							
+		52C5R	104.	3.25	10.	3.	1.	0.06
	HYDROGRAPH AT							
+		52C6	82.	3.17	7.	2.	1.	0.04
	2 COMBINED AT							
+		52C6C	173.	3.25	17.	4.	2.	0.10
	ROUTED TO							
+		52C6R	165.	3.25	17.	4.	2.	0.10
	HYDROGRAPH AT							
+		51C2DV	30.	3.17	3.	1.	0.	0.10
	ROUTED TO							
+		51C3R	29.	3.25	3.	1.	0.	0.10
	HYDROGRAPH AT							
+		51B	596.	3.42	79.	20.	8.	0.57
	DIVERSION TO							

+	51B1DV	549.	3.42	72.	18.	7.	0.57
HYDROGRAPH AT							
+	51B1D	48.	3.42	6.	2.	1.	0.57
ROUTED TO							
+	51B1R	48.	3.42	6.	2.	1.	0.57
HYDROGRAPH AT							
+	52C7	18.	3.08	1.	0.	0.	0.01
3 COMBINED AT							
+	52C7C	76.	3.25	10.	3.	1.	0.07
ROUTED TO							
+	52C7R	75.	3.33	10.	3.	1.	0.07
HYDROGRAPH AT							
+	51B1DV	549.	3.42	72.	18.	7.	0.57
DIVERSION TO							
+	51B2DV	461.	3.42	61.	15.	6.	0.57
HYDROGRAPH AT							
+	51B2D	88.	3.42	12.	3.	1.	0.57
ROUTED TO							
+	51B2R	88.	3.42	12.	3.	1.	0.57
HYDROGRAPH AT							
+	52C8	21.	3.08	1.	0.	0.	0.01
2 COMBINED AT							
+	52C8C	93.	3.42	13.	3.	1.	0.45
ROUTED TO							
+	52C8R	92.	3.42	13.	3.	1.	0.45
2 COMBINED AT							
+	52C9C1	163.	3.42	23.	6.	2.	0.52
ROUTED TO							
+	52C9R1	162.	3.42	23.	6.	2.	0.52
HYDROGRAPH AT							
+	52C9	174.	3.17	14.	3.	1.	0.07
2 COMBINED AT							
+	52C9C2	255.	3.25	37.	9.	4.	0.59
ROUTED TO							
+	52C9R2	254.	3.25	37.	9.	4.	0.59
2 COMBINED AT							
+	2C10C1	418.	3.25	54.	14.	5.	0.69
ROUTED TO							
+	2C10R1	412.	3.25	54.	14.	5.	0.69
HYDROGRAPH AT							
+	52C10	28.	3.17	2.	1.	0.	0.01
2 COMBINED AT							
+	2C10C2	428.	3.25	56.	14.	6.	0.70
HYDROGRAPH AT							
+	52C11	96.	3.17	8.	2.	1.	0.04
ROUTED TO							
+	2C11R1	88.	3.17	8.	2.	1.	0.04
HYDROGRAPH AT							
+	52C13D	40.	3.08	4.	1.	0.	0.02
2 COMBINED AT							
+	52C11C	128.	3.17	12.	3.	1.	0.07
ROUTED TO							
+	2C11CR	120.	3.17	12.	3.	1.	0.07
2 COMBINED AT							
+	2C11C2	541.	3.25	68.	17.	7.	0.77
ROUTED TO							
+	2C11R2	530.	3.25	68.	17.	7.	0.77
HYDROGRAPH AT							
+	52C12	119.	3.08	7.	2.	1.	0.02
2 COMBINED AT							
+	52C12C	567.	3.25	75.	19.	8.	0.79
ROUTED TO							

+	52C12R	549.	3.25	75.	19.	8.	0.79
HYDROGRAPH AT							
+	52C14B	76.	3.08	6.	1.	1.	0.02
2 COMBINED AT							
+	C14BC1	584.	3.25	81.	20.	8.	0.81
2 COMBINED AT							
+	C14BC2	1200.	3.25	158.	40.	16.	1.17
ROUTED TO							
+	52C14R	1194.	3.25	158.	40.	16.	1.17
HYDROGRAPH AT							
+	51B2DV	461.	3.42	61.	15.	6.	0.57
DIVERSION TO							
+	51B3DV	387.	3.42	51.	13.	5.	0.57
HYDROGRAPH AT							
+	51B3D	74.	3.42	10.	2.	1.	0.57
ROUTED TO							
+	51B3R	74.	3.42	10.	2.	1.	0.57
HYDROGRAPH AT							
+	52B1	8.	3.08	1.	0.	0.	0.00
2 COMBINED AT							
+	52B1C	76.	3.42	10.	3.	1.	0.07
ROUTED TO							
+	52B1R	75.	3.42	10.	3.	1.	0.07
HYDROGRAPH AT							
+	51B3DV	387.	3.42	51.	13.	5.	0.57
DIVERSION TO							
+	51B4DV	317.	3.42	42.	11.	4.	0.57
HYDROGRAPH AT							
+	51B4D	70.	3.42	9.	2.	1.	0.57
ROUTED TO							
+	51B4R1	70.	3.42	9.	2.	1.	0.57
2 COMBINED AT							
+	52B2C1	145.	3.42	20.	5.	2.	0.14
ROUTED TO							
+	52B2R1	142.	3.42	20.	5.	2.	0.14
HYDROGRAPH AT							
+	52B2	69.	3.17	5.	1.	1.	0.03
2 COMBINED AT							
+	52B2C2	166.	3.42	25.	6.	3.	0.17
ROUTED TO							
+	52B2R2	164.	3.42	25.	6.	3.	0.17
ROUTED TO							
+	52B3R1	163.	3.42	25.	6.	3.	0.17
HYDROGRAPH AT							
+	52B3	141.	3.17	12.	3.	1.	0.06
2 COMBINED AT							
+	52B3C2	249.	3.25	37.	9.	4.	0.23
ROUTED TO							
+	52B3R2	241.	3.33	37.	9.	4.	0.23
HYDROGRAPH AT							
+	52B4	87.	3.17	7.	2.	1.	0.03
2 COMBINED AT							
+	52B4C	284.	3.25	44.	11.	4.	0.26
ROUTED TO							
+	52B4R	277.	3.25	44.	11.	4.	0.26
HYDROGRAPH AT							
+	52B5	69.	3.08	5.	1.	1.	0.02
2 COMBINED AT							
+	52B5C1	313.	3.25	49.	12.	5.	0.28
2 COMBINED AT							
+	52B5C2	1496.	3.25	207.	52.	21.	1.45
ROUTED TO							

+	52B5R	1474.	3.25	207.	53.	21.	1.45
HYDROGRAPH AT							
+	51B4DV	317.	3.42	42.	11.	4.	0.57
DIVERSION TO							
+	51B5DV	216.	3.42	28.	7.	3.	0.57
HYDROGRAPH AT							
+	51B5D	102.	3.42	13.	3.	1.	0.57
ROUTED TO							
+	51B5R	102.	3.42	13.	3.	1.	0.57
HYDROGRAPH AT							
+	51B5DV	216.	3.42	28.	7.	3.	0.57
DIVERSION TO							
+	51B6DV	114.	3.42	15.	4.	2.	0.57
HYDROGRAPH AT							
+	51B6D	101.	3.42	13.	3.	1.	0.57
ROUTED TO							
+	51B6R	101.	3.42	13.	3.	1.	0.57
HYDROGRAPH AT							
+	51B6DV	114.	3.42	15.	4.	2.	0.57
DIVERSION TO							
+	51B7DV	66.	3.42	9.	2.	1.	0.57
HYDROGRAPH AT							
+	51B7D	48.	3.42	6.	2.	1.	0.57
ROUTED TO							
+	51B7R1	48.	3.42	6.	2.	1.	0.57
3 COMBINED AT							
+	51B7C	252.	3.42	33.	8.	3.	0.24
ROUTED TO							
+	51B7R2	244.	3.42	33.	8.	3.	0.24
HYDROGRAPH AT							
+	52B6	190.	3.17	15.	4.	2.	0.10
2 COMBINED AT							
+	52B6C	313.	3.42	48.	12.	5.	0.34
ROUTED TO							
+	52B6R	311.	3.42	48.	12.	5.	0.34
HYDROGRAPH AT							
+	52B7	303.	3.17	24.	6.	2.	0.08
2 COMBINED AT							
+	52B7C1	411.	3.25	72.	18.	7.	0.42
2 COMBINED AT							
+	52B7C2	1871.	3.25	278.	71.	28.	1.87
HYDROGRAPH AT							
+	52A2	263.	3.17	21.	5.	2.	0.06
2 COMBINED AT							
+	52A2C2	2033.	3.25	299.	76.	30.	1.62
HYDROGRAPH AT							
+	51B7DV	66.	3.42	9.	2.	1.	0.57
ROUTED TO							
+	51B8R	66.	3.50	9.	2.	1.	0.57
HYDROGRAPH AT							
+	52A1	340.	3.17	26.	6.	3.	0.13
2 COMBINED AT							
+	52A1C	344.	3.17	34.	9.	3.	0.13
HYDROGRAPH AT							
+	D51.1	261.	6.75	259.	220.	97.	6.14
2 COMBINED AT							
+	C52A	411.	3.17	275.	227.	100.	6.27
2 COMBINED AT							
+	C52	2251.	3.25	546.	295.	129.	7.92
ROUTED TO							
+	R52	2168.	3.33	545.	295.	129.	7.92
DIVERSION TO							

+		B52T	2168.	3.33	545.	295.	129.	7.92
	HYDROGRAPH AT							
+		D52T	0.	0.08	0.	0.	0.	7.92
	2 COMBINED AT							
+		CLEAR	0.	0.08	0.	0.	0.	14.06
	HYDROGRAPH AT							
+		37A	1164.	3.25	119.	30.	12.	0.68
	DIVERSION TO							
+		37AW	815.	3.25	83.	21.	8.	0.68
	HYDROGRAPH AT							
+		37AE	349.	3.25	36.	9.	4.	0.68
	ROUTED TO							
+		37AE1	342.	3.25	36.	9.	4.	0.68
	HYDROGRAPH AT							
+		SUB5N	70.	3.17	5.	1.	1.	0.03
	2 COMBINED AT							
+		CP5N	394.	3.25	41.	10.	4.	0.23
	ROUTED TO							
+		RET5N	357.	3.33	40.	10.	4.	0.23
	ROUTED TO							
+		R6N.1	294.	3.42	40.	10.	4.	0.23
	HYDROGRAPH AT							
+		SUB6B	74.	3.17	5.	1.	1.	0.03
	ROUTED TO							
+		SR6B	43.	3.25	5.	1.	1.	0.03
	2 COMBINED AT							
+		CP6.1	326.	3.42	45.	12.	5.	0.26
	HYDROGRAPH AT							
+		SUB1N	47.	3.17	3.	1.	0.	0.02
	ROUTED TO							
+		R2NA	46.	3.17	3.	1.	0.	0.02
	HYDROGRAPH AT							
+		SUB2NA	34.	3.17	2.	1.	0.	0.01
	2 COMBINED AT							
+		CP2NA	80.	3.17	6.	1.	1.	0.03
	ROUTED TO							
+		SR2NA	70.	3.25	4.	1.	0.	0.03
	ROUTED TO							
+		R2NB	59.	3.33	4.	1.	0.	0.03
	HYDROGRAPH AT							
+		SUB2NB	96.	3.17	8.	2.	1.	0.03
	2 COMBINED AT							
+		CP2NB	99.	3.33	12.	3.	1.	0.06
	ROUTED TO							
+		SR2NB	25.	3.75	11.	3.	1.	0.06
	ROUTED TO							
+		RCP4N	24.	3.75	11.	3.	1.	0.06
	HYDROGRAPH AT							
+		SUB6N	114.	3.17	8.	2.	1.	0.05
	ROUTED TO							
+		RET6N	0.	0.08	0.	0.	0.	0.05
	ROUTED TO							
+		RCP4N1	0.	0.08	0.	0.	0.	0.05
	2 COMBINED AT							
+		CP4N.1	24.	3.75	11.	3.	1.	0.11
	HYDROGRAPH AT							
+		SUB3N	67.	3.17	4.	1.	0.	0.03
	ROUTED TO							
+		RET3N	4.	4.17	3.	1.	0.	0.03
	ROUTED TO							
+		R4N	4.	4.25	3.	1.	0.	0.03
	2 COMBINED AT							

+	CP4N.2	27.	3.75	14.	4.	2.	0.14
HYDROGRAPH AT							
+	SUB4N	80.	3.17	6.	1.	1.	0.03
2 COMBINED AT							
+	CP4N	89.	3.17	19.	6.	2.	0.17
ROUTED TO							
+	R6N	82.	3.17	19.	6.	2.	0.17
HYDROGRAPH AT							
+	SUB6A	64.	3.08	4.	1.	0.	0.01
2 COMBINED AT							
+	CP6.2	121.	3.17	23.	7.	3.	0.18
2 COMBINED AT							
+	CP6N	376.	3.42	68.	18.	7.	0.45
ROUTED TO							
+	RCP6N	373.	3.42	68.	18.	7.	0.45
HYDROGRAPH AT							
+	SUB3C	55.	3.08	3.	1.	0.	0.01
2 COMBINED AT							
+	CP3C	380.	3.42	70.	19.	8.	0.46
ROUTED TO							
+	R3C	361.	3.50	70.	19.	8.	0.46
HYDROGRAPH AT							
+	GC1018	101.	3.17	7.	2.	1.	0.04
HYDROGRAPH AT							
+	GC1-9	58.	3.17	4.	1.	0.	0.03
HYDROGRAPH AT							
+	SUB3S	33.	3.17	3.	1.	0.	0.01
4 COMBINED AT							
+	CP3S	411.	3.50	84.	22.	9.	0.54
ROUTED TO							
+	RT3S	409.	3.50	84.	22.	9.	0.54
HYDROGRAPH AT							
+	SUB4S	87.	3.17	7.	2.	1.	0.03
ROUTED TO							
+	RT4S	87.	3.17	7.	2.	1.	0.03
HYDROGRAPH AT							
+	GC2-8	32.	3.17	2.	1.	0.	0.01
3 COMBINED AT							
+	1PGC28	437.	3.50	93.	25.	10.	0.58
HYDROGRAPH AT							
+	SUB3D3	35.	3.17	2.	1.	0.	0.01
2 COMBINED AT							
+	CPGC28	444.	3.50	95.	25.	10.	0.59
ROUTED TO							
+	SRGC28	443.	3.25	95.	25.	10.	0.59
ROUTED TO							
+	RT7S	431.	3.58	95.	25.	10.	0.59
HYDROGRAPH AT							
+	GC7	31.	3.17	2.	1.	0.	0.01
2 COMBINED AT							
+	CP7S	437.	3.58	97.	26.	10.	0.61
DIVERSION TO							
+	B7ST	437.	3.58	97.	26.	10.	0.61
HYDROGRAPH AT							
+	D7ST	0.	0.08	0.	0.	0.	0.61
2 COMBINED AT							
+	CLEAR	0.	0.08	0.	0.	0.	14.67
HYDROGRAPH AT							
+	SUB3D1	27.	3.08	2.	0.	0.	0.01
ROUTED TO							
+	RD1B1	22.	3.17	2.	0.	0.	0.01
HYDROGRAPH AT							

+	SUB3B1	47.	3.08	3.	1.	0.	0.01
2 COMBINED AT +	CP3B1	61.	3.08	5.	1.	1.	0.02
ROUTED TO +	RB13F	48.	3.25	5.	1.	1.	0.02
HYDROGRAPH AT +	SUB3F	141.	3.08	10.	2.	1.	0.03
2 COMBINED AT +	CP3F	169.	3.08	15.	4.	2.	0.06
HYDROGRAPH AT +	SUB3B2	67.	3.17	6.	1.	1.	0.02
ROUTED TO +	RB2E1	64.	3.17	6.	1.	1.	0.02
ROUTED TO +	RB2E2	61.	3.25	6.	1.	1.	0.02
HYDROGRAPH AT +	SUB3E1	67.	3.17	6.	1.	1.	0.02
2 COMBINED AT +	1CPE31	125.	3.17	11.	3.	1.	0.05
HYDROGRAPH AT +	SUB3D2	58.	3.17	5.	1.	0.	0.02
ROUTED TO +	RD2E2	56.	3.17	5.	1.	0.	0.02
HYDROGRAPH AT +	SUB3E2	37.	3.08	3.	1.	0.	0.01
2 COMBINED AT +	CP3E2	86.	3.17	7.	2.	1.	0.03
HYDROGRAPH AT +	PC3	59.	3.33	7.	2.	1.	0.04
4 COMBINED AT +	CPC3	400.	3.17	40.	10.	4.	0.18
DIVERSION TO +	BPC3T	400.	3.17	40.	10.	4.	0.18
HYDROGRAPH AT +	DPC3T	0.	0.08	0.	0.	0.	0.18
HYDROGRAPH AT +	SUB3E3	60.	3.08	4.	1.	0.	0.02
HYDROGRAPH AT +	PC4	25.	3.33	3.	1.	0.	0.02
HYDROGRAPH AT +	D7S	437.	3.58	97.	26.	10.	0.61
3 COMBINED AT +	CPC4	476.	3.33	104.	28.	11.	0.65
DIVERSION TO +	BPC4T	476.	3.33	104.	28.	11.	0.65
HYDROGRAPH AT +	DPC4T	0.	0.08	0.	0.	0.	0.65
3 COMBINED AT +	CLEAR	0.	0.08	0.	0.	0.	15.50
HYDROGRAPH AT +	37AW	815.	3.25	83.	21.	8.	0.68
ROUTED TO +	R14R	659.	3.33	83.	21.	8.	0.68
ROUTED TO +	RET141	631.	3.42	78.	21.	8.	0.68
ROUTED TO +	R14.1	558.	3.50	78.	21.	8.	0.68
HYDROGRAPH AT +	SUB13N	81.	3.17	7.	2.	1.	0.04
ROUTED TO +	R14.1	78.	3.25	7.	2.	1.	0.04
HYDROGRAPH AT							

+	SUB14N	88.	3.25	8.	2.	1.	0.05
3 COMBINED AT							
+	CP14	625.	3.50	92.	25.	10.	0.56
ROUTED TO							
+	RET14	574.	3.58	88.	25.	10.	0.56
ROUTED TO							
+	R18.1	570.	3.58	88.	25.	10.	0.56
HYDROGRAPH AT							
+	SUB20N	47.	3.17	4.	1.	0.	0.02
ROUTED TO							
+	R19	48.	3.25	4.	1.	0.	0.02
HYDROGRAPH AT							
+	SUB19N	94.	3.17	8.	2.	1.	0.04
2 COMBINED AT							
+	CP19N	133.	3.17	12.	3.	1.	0.06
ROUTED TO							
+	R18NC	132.	3.25	12.	3.	1.	0.06
HYDROGRAPH AT							
+	UB18NC	62.	3.17	5.	1.	0.	0.02
3 COMBINED AT							
+	CP18NC	619.	3.58	103.	29.	12.	0.64
ROUTED TO							
+	RPC1	628.	3.58	103.	29.	12.	0.64
HYDROGRAPH AT							
+	UB18NA	65.	3.17	5.	1.	1.	0.02
ROUTED TO							
+	1RPC1	31.	3.33	5.	1.	1.	0.02
HYDROGRAPH AT							
+	UB18NB	27.	3.17	2.	1.	0.	0.01
ROUTED TO							
+	2RPC1	16.	3.25	2.	1.	0.	0.01
HYDROGRAPH AT							
+	PC1	66.	3.42	10.	2.	1.	0.06
3 COMBINED AT							
+	1CPC1	107.	3.42	17.	4.	2.	0.09
ROUTED TO							
+	SRPC1	108.	3.42	16.	4.	2.	0.09
2 COMBINED AT							
+	CPC1	712.	3.58	120.	33.	13.	0.74
ROUTED TO							
+	R16NA1	720.	3.58	119.	33.	13.	0.74
HYDROGRAPH AT							
+	UB16NA	42.	3.17	3.	1.	0.	0.01
ROUTED TO							
+	R16NA1	37.	3.17	3.	1.	0.	0.01
2 COMBINED AT							
+	C16NA1	728.	3.58	122.	34.	14.	0.75
ROUTED TO							
+	R16NB1	717.	3.58	122.	34.	14.	0.75
HYDROGRAPH AT							
+	UB16NB	48.	3.17	4.	1.	0.	0.02
ROUTED TO							
+	R16NB1	43.	3.17	4.	1.	0.	0.02
2 COMBINED AT							
+	C16NB1	725.	3.58	126.	35.	14.	0.77
ROUTED TO							
+	R16NC1	727.	3.67	126.	35.	14.	0.77
HYDROGRAPH AT							
+	SUB7N	74.	3.17	5.	1.	1.	0.03
ROUTED TO							
+	R8NC	64.	3.25	5.	1.	1.	0.03
HYDROGRAPH AT							

+	SUB8NA	13.	3.08	1.	0.	0.	0.00
ROUTED TO							
+	SR8NA	1.	4.17	0.	0.	0.	0.00
ROUTED TO							
+	R8NB	1.	4.17	0.	0.	0.	0.00
HYDROGRAPH AT							
+	SUB8NB	34.	3.08	2.	1.	0.	0.01
2 COMBINED AT							
+	CP8NB	34.	3.08	3.	1.	0.	0.02
ROUTED TO							
+	SR8NB	2.	3.08	2.	1.	0.	0.02
ROUTED TO							
+	R8NC	2.	3.08	2.	1.	0.	0.02
HYDROGRAPH AT							
+	SUB8NC	51.	3.08	3.	1.	0.	0.02
3 COMBINED AT							
+	CP8NC	103.	3.17	10.	3.	1.	0.07
ROUTED TO							
+	SR8NC	18.	3.75	10.	3.	1.	0.07
ROUTED TO							
+	R9N	17.	3.75	10.	3.	1.	0.07
HYDROGRAPH AT							
+	SUB9N	143.	3.17	11.	3.	1.	0.05
2 COMBINED AT							
+	CP9N	153.	3.17	21.	6.	2.	0.12
ROUTED TO							
+	R10B	148.	3.17	21.	6.	2.	0.12
HYDROGRAPH AT							
+	SUB10B	87.	3.08	6.	2.	1.	0.03
2 COMBINED AT							
+	CP10B	226.	3.17	27.	7.	3.	0.15
ROUTED TO							
+	R11NA	229.	3.17	27.	7.	3.	0.15
HYDROGRAPH AT							
+	UB11NA	21.	3.08	1.	0.	0.	0.01
2 COMBINED AT							
+	CP11NA	245.	3.17	28.	8.	3.	0.16
ROUTED TO							
+	SR11NA	145.	3.33	28.	8.	3.	0.16
ROUTED TO							
+	R11NB	140.	3.33	28.	8.	3.	0.16
HYDROGRAPH AT							
+	UB11NB	22.	3.08	1.	0.	0.	0.01
2 COMBINED AT							
+	CP11NB	146.	3.33	29.	8.	3.	0.17
ROUTED TO							
+	SR11NB	84.	3.50	28.	8.	3.	0.17
ROUTED TO							
+	R11NC	87.	3.50	28.	8.	3.	0.17
HYDROGRAPH AT							
+	UB11NC	19.	3.08	1.	0.	0.	0.01
2 COMBINED AT							
+	C11NC1	90.	3.50	30.	8.	3.	0.17
HYDROGRAPH AT							
+	SUB10A	88.	3.08	7.	2.	1.	0.03
ROUTED TO							
+	R12NB	95.	3.17	7.	2.	1.	0.03
HYDROGRAPH AT							
+	UB12NA	36.	3.17	3.	1.	0.	0.02
ROUTED TO							
+	SR12NA	1.	6.17	0.	0.	0.	0.02
ROUTED TO							

+	R12NA	1.	6.17	0.	0.	0.	0.02
HYDROGRAPH AT							
+	UB12NB	37.	3.17	3.	1.	0.	0.02
3 COMBINED AT							
+	CP12NB	132.	3.17	10.	3.	1.	0.06
ROUTED TO							
+	SR12NB	2.	3.17	2.	2.	1.	0.06
ROUTED TO							
+	R11NC2	2.	3.50	2.	2.	1.	0.06
2 COMBINED AT							
+	CP11NC	92.	3.50	32.	10.	4.	0.23
ROUTED TO							
+	SR11NC	71.	3.75	30.	10.	4.	0.23
ROUTED TO							
+	R16NC	71.	3.75	30.	10.	4.	0.23
HYDROGRAPH AT							
+	UB16NC	102.	3.17	8.	2.	1.	0.03
2 COMBINED AT							
+	CP16NC	107.	3.17	36.	12.	5.	0.27
ROUTED TO							
+	R16NC1	106.	3.17	36.	12.	5.	0.27
2 COMBINED AT							
+	C16NC1	788.	3.67	162.	47.	19.	1.03
ROUTED TO							
+	R15N1	793.	3.67	162.	47.	19.	1.03
HYDROGRAPH AT							
+	PC2	93.	3.25	8.	2.	1.	0.05
2 COMBINED AT							
+	CP15N1	815.	3.67	170.	49.	20.	1.09
ROUTED TO							
+	SRPC2	786.	3.75	169.	48.	20.	1.09
HYDROGRAPH AT							
+	UB17NA	28.	3.08	2.	0.	0.	0.01
ROUTED TO							
+	SR17NA	2.	3.75	1.	0.	0.	0.01
ROUTED TO							
+	R17NB	2.	3.75	1.	0.	0.	0.01
HYDROGRAPH AT							
+	UB17NB	27.	3.17	2.	0.	0.	0.01
2 COMBINED AT							
+	CP17NB	28.	3.17	3.	1.	0.	0.02
ROUTED TO							
+	SR17NB	1.	3.00	1.	1.	0.	0.02
ROUTED TO							
+	R17A	1.	3.08	1.	1.	0.	0.02
HYDROGRAPH AT							
+	SUB17A	30.	3.08	2.	0.	0.	0.01
2 COMBINED AT							
+	CP17A1	31.	3.08	3.	1.	1.	0.03
HYDROGRAPH AT							
+	UB17NC	19.	3.08	1.	0.	0.	0.01
2 COMBINED AT							
+	CP17A	50.	3.08	3.	2.	1.	0.03
ROUTED TO							
+	R15N	34.	3.17	3.	2.	1.	0.03
HYDROGRAPH AT							
+	SUB15N	142.	3.17	11.	3.	1.	0.04
2 COMBINED AT							
+	CP15N	175.	3.17	14.	4.	2.	0.07
ROUTED TO							
+	R15N2	179.	3.17	14.	4.	2.	0.07
2 COMBINED AT							

+	CP15N2	804.	3.75	182.	53.	22.	1.16
ROUTED TO							
+	R15N2	768.	3.83	182.	53.	22.	1.16
HYDROGRAPH AT							
+	DPC3	400.	3.17	40.	10.	4.	0.18
2 COMBINED AT							
+	CPC3A	818.	3.75	217.	62.	25.	1.34
ROUTED TO							
+	RPC3A	820.	3.83	217.	62.	25.	1.34
HYDROGRAPH AT							
+	DPC4	476.	3.33	104.	28.	11.	0.65
2 COMBINED AT							
+	CPC4A	1140.	3.75	319.	90.	36.	1.99
ROUTED TO							
+	RPC4A	1131.	3.83	319.	90.	36.	1.99
DIVERSION TO							
+	BPC4AT	1131.	3.83	319.	90.	36.	1.99
HYDROGRAPH AT							
+	DPC4AT	0.	0.08	0.	0.	0.	1.99
HYDROGRAPH AT							
+	SUB1-2	181.	3.17	16.	4.	2.	0.06
HYDROGRAPH AT							
+	GCRB18	27.	3.17	2.	1.	0.	0.01
2 COMBINED AT							
+	CPRET1	208.	3.17	18.	4.	2.	0.07
ROUTED TO							
+	SR18S	0.	0.08	0.	0.	0.	0.07
HYDROGRAPH AT							
+	SUB5S	72.	3.17	5.	1.	1.	0.03
HYDROGRAPH AT							
+	GC1216	83.	3.17	6.	2.	1.	0.04
HYDROGRAPH AT							
+	GC1415	104.	3.17	7.	2.	1.	0.05
HYDROGRAPH AT							
+	SUB6S	53.	3.17	5.	1.	0.	0.02
HYDROGRAPH AT							
+	SUB7S	79.	3.17	6.	2.	1.	0.03
5 COMBINED AT							
+	CPRET2	391.	3.17	30.	7.	3.	0.16
ROUTED TO							
+	SRRET2	0.	0.08	0.	0.	0.	0.16
2 COMBINED AT							
+	CLEAR	0.	0.08	0.	0.	0.	0.22
HYDROGRAPH AT							
+	SUB8S	76.	3.17	6.	1.	1.	0.03
ROUTED TO							
+	RGC36	64.	3.25	6.	1.	1.	0.03
HYDROGRAPH AT							
+	GC36	77.	3.17	7.	2.	1.	0.04
2 COMBINED AT							
+	C1GC36	141.	3.17	13.	3.	1.	0.07
HYDROGRAPH AT							
+	SUB9S	68.	3.17	5.	1.	1.	0.02
ROUTED TO							
+	R9S	69.	3.17	5.	1.	1.	0.02
2 COMBINED AT							
+	CPGC36	210.	3.17	18.	4.	2.	0.09
ROUTED TO							
+	SRGC36	202.	3.25	18.	4.	2.	0.09
HYDROGRAPH AT							
+	SUB7A	27.	3.17	2.	1.	0.	0.01
ROUTED TO							

+	SR7A	7.	3.42	2.	1.	0.	0.01
ROUTED TO							
+	R10S	7.	3.58	2.	1.	0.	0.01
HYDROGRAPH AT							
+	SUB10S	78.	3.17	6.	2.	1.	0.02
2 COMBINED AT							
+	CP10S	81.	3.17	8.	2.	1.	0.03
HYDROGRAPH AT							
+	SUB11S	118.	3.08	7.	2.	1.	0.02
ROUTED TO							
+	R11S	88.	3.17	7.	2.	1.	0.02
2 COMBINED AT							
+	C10SA	169.	3.17	15.	4.	2.	0.06
ROUTED TO							
+	R10SA	173.	3.17	15.	4.	2.	0.06
HYDROGRAPH AT							
+	GC45	45.	3.08	2.	1.	0.	0.01
HYDROGRAPH AT							
+	PC5	43.	3.33	5.	1.	1.	0.04
HYDROGRAPH AT							
+	DPC4A	1131.	3.83	319.	90.	36.	1.99
6 COMBINED AT							
+	CPC5	1242.	3.33	356.	100.	40.	2.10
ROUTED TO							
+	RC5	1234.	3.42	356.	100.	40.	2.10
HYDROGRAPH AT							
+	SCN5D	64.	3.25	6.	1.	1.	0.05
2 COMBINED AT							
+	CN5D	1271.	3.42	362.	101.	41.	2.15
HYDROGRAPH AT							
+	D52	2168.	3.33	545.	295.	129.	7.92
HYDROGRAPH AT							
+	S53A	247.	3.25	26.	6.	3.	0.18
2 COMBINED AT							
+	C53	2377.	3.33	569.	301.	131.	8.10
HYDROGRAPH AT							
+	S53A1	456.	3.33	53.	13.	5.	0.34
2 COMBINED AT							
+	C53A1	2792.	3.33	619.	313.	136.	8.43
HYDROGRAPH AT							
+	SCN6B	158.	3.17	13.	3.	1.	0.05
2 COMBINED AT							
+	C53A	2871.	3.33	630.	316.	137.	8.48
HYDROGRAPH AT							
+	SCN6D	68.	3.17	5.	1.	0.	0.04
2 COMBINED AT							
+	CP6D	2895.	3.33	634.	317.	138.	8.52
HYDROGRAPH AT							
+	SCN6C	347.	3.17	29.	7.	3.	0.14
2 COMBINED AT							
+	CP6C	3097.	3.25	660.	324.	141.	8.66
2 COMBINED AT							
+	CP5D	4124.	3.33	1002.	418.	179.	10.81
HYDROGRAPH AT							
+	SCN5C	240.	3.25	23.	6.	2.	0.19
HYDROGRAPH AT							
+	SCN6E	35.	3.58	6.	1.	1.	0.04
3 COMBINED AT							
+	PIMA	4326.	3.33	1027.	424.	181.	11.05
HYDROGRAPH AT							
+	SCNA1	133.	3.33	15.	4.	2.	0.11
HYDROGRAPH AT							

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+                          1G      200.   3.08        14.        4.        1.      0.06
        ROUTED TO
+                       DET1G       25.   3.50        13.        4.        1.      0.06
        ROUTED TO
+                      R1GI1        25.   3.58        13.        4.        1.      0.06
        HYDROGRAPH AT
+                          1I      189.   3.08        15.        4.        2.      0.06
        ROUTED TO
+                       DET1I       42.   3.42        14.        4.        2.      0.06
        2 COMBINED AT
+                       CP1I1       66.   3.42        27.        7.        3.      0.12
        HYDROGRAPH AT
+                          1J       65.   3.08         5.        1.        0.      0.02
        ROUTED TO
+                       DET1J        8.   3.50         4.        1.        0.      0.02
        ROUTED TO
+                      R1JI2        8.   3.67         4.        1.        0.      0.02
        2 COMBINED AT
+                       CP1I2       73.   3.50        31.        9.        3.      0.14
        ROUTED TO
+                      R1IL1       73.   3.50        31.        9.        3.      0.14
        HYDROGRAPH AT
+                          1L      111.   3.25        13.        3.        1.      0.05
        2 COMBINED AT
+                       CP1L1      170.   3.33        43.       12.        5.      0.19
        ROUTED TO
+                         RA2      154.   3.50        43.       12.        5.      0.19
        HYDROGRAPH AT
+                       SCNA2      234.   3.33        25.        6.        3.      0.19
        2 COMBINED AT
+                         CA2      363.   3.33        68.       18.        7.      0.37
        2 COMBINED AT
+                         CPA2     495.   3.33        83.       22.        9.      0.48
        HYDROGRAPH AT
+                       SCNA3      220.   3.42        28.        7.        3.      0.20
        2 COMBINED AT
+                         CPA3     689.   3.33       111.       29.       12.      0.69
        HYDROGRAPH AT
+                       SCNA4      187.   3.33        20.        5.        2.      0.15
        2 COMBINED AT
+                         CPA4     874.   3.33       130.       34.       14.      0.83
        HYDROGRAPH AT
+                       SCNA5       49.   3.75        10.        3.        1.      0.07
        2 COMBINED AT
+                      MILLER      911.   3.33       140.       36.       15.      0.90
        2 COMBINED AT
+                      OLDB-I     5081.   3.33      1157.      457.      195.     11.94
        ROUTED TO
+                      OLDB-O     1827.   4.17      1153.      457.      195.     11.94
1
*** NORMAL END OF HEC-1 ***
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APPENDIX F

Ultimate Condition 100-Year, 24-Hour HEC-1 Output File Printout

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1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*             MAY  1991             *
*          VERSION 4.0.1E           *
*     Lahey F77L-EM/32 version 5.01 *
*       Dodson & Associates, Inc.   *
*  RUN DATE  03/25/98  TIME  13:48:55 *
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*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*       DAVIS, CALIFORNIA 95616     *
*          (916) 551-1748           *
*                                   *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

```
1                                   HEC-1 INPUT                                   PAGE  1

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

   1          ID    PIMA ROAD THREE BASINS                          File: ULTMT-24.IH1
   2          ID    by  Stantech for the City of Scottsdale       Original: 08-07-97     mcg
   3          ID        Project:  28900051
   4          ID
   5          ID
   6          ID    100-YEAR, 24-HOUR STORM
   7          ID        10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
   8          ID        10% LEVEL DESIGN FOR DEER VALLEY DETENTION BASIN ALTERNATIVE 3
   9          ID        100% OF FLOWSPLITS ARE ROUTED TO DEER VALLEY DETENTION BASIN
  10          ID        10% LEVEL DESIGN FOR OUTER LOOP DETENTION BASIN
  11          ID
  12          ID        ULTIMATE CONDITION --- POWER LINE CHANNEL:
  13          ID          GRAYHAWK RUNOFF RELEASED TO NATURAL WASHES ARE COLLECTED IN THE
  14          ID          "POWER LINE CHANNEL" AND ROUTED TO THE OUTER LOOP DETENTION BASIN.
  15          ID          THE ULTIMATE LOCATION AND GEOMETRY OF THE POWER LINE CHANNEL WILL
  16          ID          BE DETERMINED BY OTHERS.
  17          ID
              *DIAGRAM
  18          IT       5                    2000
  19          IO       5
              *

  20          KK    S30N
  21          KM     RUNOFF FROM SUBBASIN 30N
  22          BA  0.6518
  23          PH            12.4     .84    1.53    2.46    2.75    2.94    3.31    3.74    4.17
  24          LS              82      13              82      13
  25          UK     300   0.350    0.13      20
  26          UK     300   0.050    0.13      80
  27          RK    1550   0.069   0.045  0.0096    TRAP       0      12
  28          RK   10520   0.038   0.040            TRAP      15      15
              *

  29          KK    R30N
  30          KM     NORMAL DEPTH CHANNEL ROUTE FROM C30N TO C31.1 THROUGH PIMA CHANNEL
  31          RS       1    FLOW      -1
  32          RC   0.022   0.022   0.022    2470    0.01
  33          RX    1000    1012    1020    1028    1036    1044    1052    1064
  34          RY     107     104     102     100     100     102     104     107
              *

  35          KK   S31.1
  36          KM     RUNOFF FROM SUBBASIN 31.1
  37          BA  0.2663
  38          LS            76.6      13            76.6      13
  39          UK     300   0.567    0.13      10
  40          UK     300   0.050    0.13      90
  41          RK    1950   0.056   0.045  0.0147    TRAP       0      10
  42          RK    7600   0.035   0.040            TRAP      22       8
              *
1                                   HEC-1 INPUT                                   PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 43          KK   C31.1
 44          KM     COMBINE ROUTED HYDROGRAPH FROM S30N WITH RUNOFF FROM SUBBASIN 31.1
 45          HC       2
             *
             *  R31.1
             *   ****  TOO SHORT TO ROUTE  ****
             *    NORMAL DEPTH CHANNEL ROUTE FROM C31.1 TO C34.1 THROUGH PIMA CHANNEL
             *      1    FLOW      -1
             *  0.022   0.022   0.022    1500    0.01
             *   1000    1012    1020    1028    1048    1056    1064    1076
             *    107     104     102     100     100     102     104     107
             *

 46          KK   S34.2
 47          KM     RUNOFF FROM SUBBASIN 34.2
 48          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
 49          BA  0.4441
 50          LS            77.3      12            77.3      12
 51          UK      50    0.10    0.13      10
 52          UK     300   0.040    0.13      90
 53          RK    2200  0.0452   0.045  0.0538    TRAP       0       10
 54          RK    8150  0.0386   0.045            TRAP       0       10
             *

 55          KK   C34.2
 56          KM     COMBINE ROUTED HYDROGRAPH FROM C31.1 WITH RUNOFF FROM SUBBASIN 34.2
 57          HC       2
             *

 58          KK    S35N
 59          KM     RUNOFF FROM SUBBASIN 35N
 60          BA  0.5482
 61          LS              82      13              82      13
 62          UK     300   0.491    0.13      15
 63          UK     300   0.113    0.13      85
 64          RK    2700   0.079   0.045  0.0242    TRAP       3        6
 65          RK    5050   0.028   0.040            TRAP      15       15
             *

 66          KK   D35NR
 67          KM     DIVERSION JUST DOWNSTREAM OF THE ALMA SCHOOL ROAD CULVERT
 68          KM        RIGHT BRANCH IS ROUTED TO C36.2
 69          KM        LEFT BRANCH (CODED ON DQ RECORD) IS ROUTED TO C36R1
 70          DT   D35NL
 71          DI       0      10      66     168     343     581     805     977    1168    1320
 72          DQ       0      10      66     168     343     581     805     977    1168    1320
             *

 73          KK   R35NR
 74          KM     NORMAL DEPTH CHANNEL ROUTE FROM S35N TO C36.2
 75          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
 76          RS       1    FLOW      -1
 77          RC    0.06    0.04    0.06    3500  0.0343
 78          RX    1000    1006    1026    1027    1057    1058    1078    1084
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 79          RY     105     103     101     100     100     101     103     105
             *

 80          KK   S36.2
 81          KM     RUNOFF FROM SUBBASIN 36.2
 82          BA  0.2087
 83          LS            76.6      13            76.6      13
 84          UK     300   0.580    0.13       5
 85          UK     300   0.100    0.13      95
 86          RK    1800   0.036   0.045  0.0145    TRAP      10       10
 87          RK    3520   0.028   0.040            TRAP      20        6
             *

 88          KK   C36.2
 89          KM     COMBINE ROUTED HYDROGRAPH FROM S35N WITH RUNOFF FROM SUBBASIN 36.2
 90          HC       2
             *

 91          KK  D36.2R
 92          KM     DIVERSION AT DESERT HIGHLANDS DRIVE
 93          KM        RIGHT BRANCH, AT GOLF CART CROSSING IS ROUTED TO C34.1
 94          KM        LEFT BRANCH (CODED ON DQ RECORD) IS ROUTED TO C36R1
 95          DT  D36.2L
 96          DI       0      36     166     288     360     430     538     681     859    1074
 97          DQ       0      36     166     288     360     430     538     681     859    1074
             *

 98          KK  R36.2R
 99          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.2 TO C34.1
100          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
101          RS       4    FLOW      -1
102          RC    0.06    0.04    0.06    7800  0.0321
103          RX    1000    1043    1053    1068    1093    1098    1133    1218
104          RY   102.6   100.6   100.5     100     100   100.5   100.6   102.6
             *
```

```
105          KK   S34.1
106          KM     RUNOFF FROM SUBBASIN 34.1
107          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
108          BA  1.1635
109          LS           77.3      12            77.3      12
110          UK     300   0.590    0.13      25
111          UK     300   0.040    0.13      75
112          RK    2570   0.085   0.045  0.0214    TRAP       0       10
113          RK    8800  0.0325   0.040            TRAP      20       10
             *

114          KK   C34.1
115          KM     COMBINE ROUTED HYDROGRAPH FROM C36.2 W/RUNOFF FROM SUBBASIN 34.1
116          HC       2
             *
1                                          HEC-1 INPUT                                          PAGE  4

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

117          KK  HVDB-I
118          KM     COMBINE HYDROGRAPH FROM C34.2 W/ C34.1
119          HC       2
             *

120          KK  HVDB-O
121          KM     DETENTION BASIN AT HAPPY VALLEY ROAD - NONREGULATORY STRUCTURE
122          KM        PRINCIPAL SPILLWAY:  42" x 800' RCP WITH A SLOPE OF 0.5%
123          KM        EMERGENCY SPILLWAY:  200' x 1.5' RECT. WEIR - CREST ELEV = 2089.5
124          KM        13 ACRE-FEET OF STORAGE FOR SEDIMENTAION
125          RS       1    STOR      -1
126          SV       0     0.2      0.7      1.8      3.4      5.4     36.3     88.1    150.2    224.3
127          SV   240.0
128          SE    2065    2066     2067     2068     2069     2070     2075     2080     2085     2090
129          SE    2091
130          SQ       0      20       30       40       60       70       80       90      100      110
131          SQ     120     130      140    143.6      328    452.6    599.4      767    954.1   1160.2
132          SE  2065.0 2066.77 2067.45 2067.94 2068.95 2070.44 2072.26 2074.32 2076.62 2079.16
133          SE  2081.9 2084.98 2088.25   2089.5   2090.0   2090.2   2090.4   2090.6   2090.8     2091
             *

134          KK   R34.1
135          KM     NORMAL DEPTH CHANNEL ROUTE FROM C34.1 TO C36.1 THROUGH PIMA CHANNEL
136          RS       1    FLOW      -1
137          RC   0.022   0.022    0.022     2200     0.01
138          RX    1000    1012     1020     1028     1036     1044     1052     1064
139          RY     107     104      102      100      100      102      104      107
             *

140          KK   S36.1
141          KM     RUNOFF FROM SUBBASIN 36.1
142          BA  0.1394
143          LS           73.4      11
144          UK     300  0.0420    0.130      100
145          RK    2330  0.0320    0.045   0.0134    TRAP      10       30
146          RK    3200  0.0270    0.040            TRAP      20       30
             *

147          KK   C36.1
148          KM     COMBINE ROUTED HYDROGRAPH FROM C34.1 WITH RUNOFF FROM SUBBASIN 36.1
149          HC       2
             *

150          KK   R36.1
151          KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.1 TO C36R1 THROUGH PIMA CHANNEL
152          RS       1    FLOW      -1
153          RC   0.022   0.022    0.022     1520     0.01
154          RX    1000    1012     1020     1028     1036     1044     1052     1064
155          RY     107     104      102      100      100      102      104      107
             *
1                                          HEC-1 INPUT                                          PAGE  5

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

156          KK   B35NL
157          KM     BRING BACK DIVERTED HYDROGRAPH FROM C35N
158          DR   D35NL
             *

159          KK   R35NL
160          KM     NORMAL DEPTH CHANNEL ROUTE FROM S35N TO C36R1
161          KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
162          RS       5    FLOW      -1
163          RC    0.06    0.04     0.06    14480   0.0318
164          RX    1000    1040     1080     1086     1091     1097     1137     1174
165          RY     105     104      103      100      100      103      104      105
             *

166          KK  B36.2L
167          KM     BRING BACK DIVERTED HYDROGRAPH FROM C36.2
168          DR  D36.2L
```

```
                *
169             KK  R36.2L
170             KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.2 TO C36R1
171             KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
172             RS       3    FLOW      -1
173             RC    0.06    0.04    0.06   10160  0.0342
174             RX    1000    1030    1060    1066    1076    1082    1112    1142
175             RY     103   102.5     102     100     100     102   102.5     103
                *

176             KK  S36R1A
177             KM     RUNOFF FROM SUBBASIN 36R1A
178             KM        RAINFALL LOSSES FOR GREINER SUBBASINS 36.3, 36R1 AND 35R ARE AREA WEIGHT
179             BA  0.6310
180             LS            74.3      10
181             UK     300   0.020   0.130     100
182             RK    1420   0.032   0.045  0.0061    TRAP       0      13
183             RK   10800   0.033   0.040            TRAP      10       9
                *

184             KK  C36R1A
185             KM     COMBINE ROUTED HYDROGRAPH FROM C36.1, D35NL & D36.2L W/RUNOFF FROM S36R1A
186             KM        AREA IS AREA FROM C36.1 + S36R1 + 40% OF AREA FROM S35N + 30% OF AREA
187             KM        FROM C36.2
188             HC       4  4.0530
                *

189             KK  S36R1B
190             KM     RUNOFF FROM SUBBASIN 36R1B
191             KM        RAINFALL LOSSES FOR GREINER SUBBASINS 36.3, 36R1 AND 35R ARE AREA WEIGHT
192             BA  0.5863
193             LS            74.3      10
194             UK     300   0.020   0.130     100
195             RK    1420   0.032   0.045  0.0061    TRAP       0      13
196             RK    8500   0.033   0.040            TRAP      10       9
                *
1                                          HEC-1 INPUT                                          PAGE  6

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

197             KK  C36R1B
198             KM     COMBINE HYDROGRAPH FROM C36R1A W/RUNOFF FROM S36R1B AT C36R1B
199             HC       2  4.6393
                *
                * R36R1B
                *   ****  TOO SHORT TO ROUTE  ****
                *    NORMAL DEPTH CHANNEL ROUTE FROM C36R1B TO C36R2A THROUGH PIMA CHANNEL
                *      1    FLOW      -1
                *  0.022   0.022   0.022    1900    0.01
                *   1000    1012    1020    1028    1036    1044    1052    1064
                *    107     104     102     100     100     102     104     107
                *

200             KK  S36R2A
201             KM     RUNOFF FROM SUBBASIN 36R2A
202             BA  0.1325
203             LS              72      20
204             UK     100   0.045   0.130     100
205             RK    1900   0.032   0.017   0.015    TRAP      15       7
206             RK     800   0.030   0.035            TRAP      10       5
                *

207             KK  C36R2A
208             KM     COMBINE ROUTED HYDROGRAPH FROM C36R1B W/RUNOFF FROM SUBBASIN 36R2A
209             HC       2
                *

210             KK  R36R2A
211             KM     NORMAL DEPTH CHANNEL ROUTE FROM C36R2A TO C36R2B THROUGH PIMA CHANNEL
212             KM     ****  TOO SHORT TO ROUTE  ****
213             KM       1    FLOW      -1
214             KM   0.022   0.022   0.022    2130    0.01
215             KM    1000    1012    1020    1028    1036    1044    1052    1064
216             KM     107     104     102     100     100     102     104     107
217             KM
218             KM     LAG THE HYDROGRAPH BY ONE TIME STEP TO ACCOUNT FOR SERIES OF INDIVIDUAL
219             KM     ROUTING REACHES THAT ARE TOO SHORT TO ROUTE.
220             KM        ASSUME WAVE CELERITY = 15-20 fps AND TOTAL LENGTH OF 5030'
221             RT                      1
                *

222             KK  S36R2B
223             KM     RUNOFF FROM SUBBASIN 36R2A
224             BA  0.2417
225             LS              72      12
226             UK     280   0.045   0.100     100
227             RK    1900   0.032   0.017   0.015    TRAP      15       7
228             RK    7360   0.030   0.040            TRAP      30      10
                *
1                                          HEC-1 INPUT                                          PAGE  7
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 229          KK  C36R2B
 230          KM     COMBINE ROUTED HYDROGRAPH FROM C36R2A W/RUNOFF FROM SUBBASIN 36R2B
 231          HC       2
              *

 232          KK   S51.1
 233          KM     RUNOFF FROM SUBBASIN 51.1
 234          KM        RAINFALL LOSSES FOR GREINER SUBBASINS 51.1 AND 49.1 ARE AREA WEIGHTED
 235          BA   1.130
 236          LS            73.9      12
 237          UK     300   0.037   0.130     100
 238          RK    1800   0.038   0.045  0.0161    TRAP       0      12
 239          RK   14400   0.032   0.040            TRAP      40      15
              *

 240          KK  DVDB-I
 241          KM     COMBINE HYDROGRAPH FROM C36R2 W/RUNOFF FROM SUBBASIN 51.1
 242          HC       2
              *

 243          KK  DVDB-O
 244          KM     DETENTION BASIN AT DEER VALLEY ROAD - NONREGULATORY STRUCTURE
 245          KM        PRINCIPAL SPILLWAY:  CONDUIT EXTENDING TO BEARDSLEY ROAD
 246          KM        EMERGENCY SPILLWAY:  200' x 1.5' RECT. WEIR - CREST ELEV = 1879.5
 247          KM        13 ACRE-FEET OF STORAGE FOR SEDIMENTAION
 248          RS       1    STOR      -1
 249          SV       0     0.2     0.7     1.7     3.5     6.1    38.6    86.9   143.2   209.9
 250          SV   224.1
 251          SE    1855    1856    1857    1858    1859    1860    1865    1870    1875    1880
 252          SE    1881
 253          SQ       0      20      40      60      80     100     120     140     160     180
 254          SQ     200     220     240     260  264.38  448.42  719.57     887    1074  1279.9
 255          SE    1855 1856.43 1857.53 1858.31 1858.95 1859.61 1860.29  1861.8 1863.71 1865.82
 256          SE  1868.1 1870.67 1873.43 1877.29  1879.5  1880.0  1880.4  1880.6  1880.8  1881.0
              *
              *  R51.1
              *     DEER VALLEY BASIN OUTLET CONDUIT TO THOMPSON PEAK PARKWAY
              *     COMBINE WITH RUNOFF FROM DC RANCH
              *       L = 2820 feet
              *

 257          KK  D51.1T
 258          KM     DIVERT 100% OF FLOW TO RETRIEVE AT THOMPSON PEAK PARKWAY
 259          DT  B51.1T
 260          DI       0   10000
 261          DQ       0   10000
              *
              *
              *     ****************  BEGIN DC RANCH WATERSHED  ****************
              *
              *       THE DC RANCH HEC-1 MODEL WAS DEVELOPED BY WOOD/PATEL ASSOCIATES
              *           WOOD/PATEL FILE NAME:  DC0721C.DAT
              *           MODEL DATE:            4 JANUARY 96
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 262          KK    52D4
 263          KM   RUNOFF FROM SUBBASIN 52D4
 264          BA    .070
 265          LS              75    14.5
 266          UK     120    .010     .15     100
 267          RK    3100    .035    .045            TRAP      30      10
              *

 268          KK   52D4R
 269          KM   ROUTE 52D4C THROUGH 52D5 TO CP 52D5C
 270          RK    1350    .033    .045            TRAP      10      10
              *

 271          KK   52D4B
 272          KM   RUNOFF FROM SUBBASIN 52D4B
 273          BA    .022
 274          LS              75      63
 275          UK     120    .010     .15     100
 276          RK    2200    .033    .045            TRAP      30      10
              *

 277          KK  52D5C1
 278          KM   COMBINE 52D4R AND 52D4B
 279          HC       2
              *

 280          KK   52D5A
 281          KM   RUNOFF FROM 52D5A
 282          BA   .0232
 283          LS              75      63
 284          UK     120    .010     .15     100
```

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 285          RK    1300    .032    .045            TRAP      30      10
              *

 286          KK  52D5AR
 287          KM   ROUTE 52D5A THROUGH BEARDSLEY CHANNEL TO CP 52D5C2
 288          RK     400   .0143    .035            TRAP      50       4
              *

 289          KK  52D5C2
 290          KM   COMBINE 25D5C1 AND 52D5AR
 291          HC       2
              *

 292          KK   52D5R
 293          KM   ROUTE 52D5C IN BEARDSLEY CHANNEL TO CP 52C3BC2
 294          RK     240   .0143    .035            TRAP      50       4
              *
1                                          HEC-1 INPUT                                                    PAGE  9

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

 295          KK    52C3
 296          KM   RUNOFF FROM SUBBASIN 52C3
 297          BA    .006
 298          LS              75      65
 299          UK     100     .02     .10     100
 300          RK     800    .033    .045            TRAP      30      10
              *

 301          KK   52C3R
 302          KM   ROUTE 52C3 THROUGH SUBBASIN 52C4 TO CP 52C4C1
 303          RK    1350    .034    .045            TRAP      10      10
              *

 304          KK   52C3B
 305          KM   RUNOFF FROM SUBBASIN 52C3B
 306          BA    .016
 307          LS              75      60
 308          UK     100     .02     .10     100
 309          RK    1400    .034    .045            TRAP      30      10
              *

 310          KK  2C3BC1
 311          KM   COMBINE 52C3B AND 52C3R
 312          HC       2
              *

 313          KK  2C3BC2
 314          KM   COMBINE 52C3BC1 AND 52C5R
 315          HC       2
              *

 316          KK  52C3BR
 317          KM   ROUTE 52C3BC2 IN BEARDSLEY CHANNEL TO CP 52C4C2
 318          RK     430   .0143    .035            TRAP      50       4
              *
              *

 319          KK     51C     SUB
 320          KM        RUNOFF FROM SUB 51C
 321          BA   .0972
 322          LS              74      15
 323          UK     100   .0213     .10     100
 324          RK    3900   .0375    .045            TRAP      30      10
              *

 325          KK   51C1D
 326          KM   DIVERT 67 PERCENT OF 51C TO WEST (33 PERCENT TO SOUTH)
 327          DT  51C1DV
 328          DI       0   10000
 329          DQ       0    6700
              *
1                                          HEC-1 INPUT                                                    PAGE 10

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

 330          KK   51C1R
 331          KM   ROUTE 51C1D THROUGH SUBBASIN 52C1
 332          RK    1350   .0364    .045            TRAP      10      10
              *

 333          KK    52C1
 334          KM   RUNOFF FROM SUBBASIN 52C1
 335          BA    .029
 336          LS              75    20.5
 337          UK     100     .02     .10     100
 338          RK    1350    .021    .045            TRAP      30      10
              *

 339          KK   52C1C
 340          KM   COMBINE 51C1R AND 52C1
```

```
341          HC       2   .0611
             *

342          KK   52C1R
343          KM   ROUTE 52C1C THROUGH BASIN 52C2A TO CP 52C2BC
344          RK    1500    .033    .045            TRAP      10       10
             *

345          KK   52C2A
346          KM   RUNOFF FROM SUBBASIN 52C2A
347          BA    .019
348          LS              75       2
349          UK     100     .02     .10     100
350          RK    1500    .033    .045            TRAP      30       10
             *

351          KK  52C2AC
352          KM   COMBINE 52C2A AND 52C1R
353          HC       2
             *

354          KK   52C2B
355          KM   RUNOFF FROM SUBBASIN 52C2B
356          BA   .0275
357          LS              75      11
358          UK     100     .02     .10     100
359          RK    2000    .030    .045            TRAP      30       10
             *

360          KK  52C2BC
361          KM   COMBINE 52C2B AND 52C2AC
362          HC       2
             *
```



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

363          KK  52C2BR
364          KM   ROUTE 52C2BC THROUGH 52C2C TO CP 52C2CC
365          RK    1500    .040    .045            TRAP      10       10
             *

366          KK   52C2C
367          KM   RUNOFF FROM SUBBASIN 52C2C
368          BA    .014
369          LS              75      62
370          UK     100     .02     .10     100
371          RK    1500     .04    .045            TRAP      30       10
             *

372          KK  52C2CC
373          KM   COMBINE 52C2C AND 52C2BR
374          HC       2
             *

375          KK   52C2R
376          KM   ROUTE 52C2CC THROUGH SUBBASIN 52C4 TO CP 52C4C1
377          RK    1550    .030    .045            TRAP      10       10
             *

378          KK    52C4
379          KM   RUNOFF FROM SUBBASIN 52C4
380          BA    .017
381          LS              75      60
382          UK     100     .02     .10     100
383          RK    1550    .030    .045            TRAP      30       10
             *

384          KK  52C4C1
385          KM   COMBINE 52C4 AND 52C2R
386          HC       2
             *

387          KK  52C4C2
388          KM   COMBINE 52C4C1 AND 52C3BR
389          HC       2
             *

390          KK   52C4R
391          KM   ROUTE 52C4C2 WEST IN BEARDSLEY CHANNEL TO CP 52C15C2
392          RK     850   .0143    .035            TRAP      50        4
             *

393          KK   52C13
394          KM   RUNOFF FROM SUBBASIN 52C13
395          BA    .023
396          LS              75      31
397          UK     100     .02     .10     100
398          RK     950    .040    .045            TRAP      30       10
             *
```

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

 399          KK  2C13DV
 400          KM   DIVERT FIRST 40 CFS INTO STORM DRAIN; REMAINDER FLOWS OVER ROAD
 401          DT   STORM
 402          DI       0      40    1000
 403          DQ       0      40      40
              *
              * KK52C13R
              * KM ROUTE 52C13 THROUGH SUBBASIN 52C15 TO CP 52C15C1
              * RK  1800    .035    .045            TRAP      10      10
              *

 404          KK   52C15
 405          KM   RUNOFF FROM SUBBASIN 52C15
 406          BA    .046
 407          LS              75    64.4
 408          UK     100     .02     .10     100
 409          RK    2050    .036    .045            TRAP      30      10
              *

 410          KK  2C15C1
 411          KM   COMBINE 52C15 AND 52C13DV
 412          HC       2    .046
              *

 413          KK  2C15C2
 414          KM   COMBINE 52C15C1 AND 52C4R
 415          HC       2
              *

 416          KK  52C15R
 417          KM   ROUTE 52C15C2 IN BEARDSLEY CHANNEL TO CP 52C14C3
 418          RK     750   .0143    .035            TRAP      50       4
              *

 419          KK  52C14A
 420          KM   RUNOFF FROM SUBBASIN 52C14A
 421          BA    .041
 422          LS              75    67.7
 423          UK     100     .02     .10     100
 424          RK    2050    .031    .045            TRAP      30      10
              *

 425          KK  2C14AC
 426          KM   COMBINE 52C14A AND 52C15R
 427          HC       2
              *

 428          KK  2C14AR
 429          KM   ROUTE 52C14AC IN BEARDSLEY CHANNEL TO CP 52C14BC2
 430          RK     380   .0143    .035            TRAP      50       4
              *
              *
```



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

 431          KK  51C1DV
 432          KM   RETRIEVE DIVERTED FLOW
 433          DR  51C1DV
              *

 434          KK   51C2D
 435          KM   DIVERT 27 PERCENT OF 51C1DV TO WEST (73 PERCENT TO SOUTH)
 436          DT  51C2DV
 437          DI       0   10000
 438          DQ       0    2700
              *

 439          KK   51C2R
 440          KM   ROUTE 51C2D THROUGH SUBBASIN 52C5 TO CP 52C5C
 441          RK     700    .030    .045            TRAP      10      10
              *

 442          KK    52C5
 443          KM   RUNOFF FROM SUBBASIN 52C5
 444          BA    .016
 445          LS              75      27
 446          UK     100     .02     .10     100
 447          RK    1200     .03    .045            TRAP      30      10
              *

 448          KK   52C5C
 449          KM   COMBINE 51C2R AND 52C5
 450          HC       2   .0635
              *

 451          KK   52C5R
 452          KM   ROUTE 52C5C THROUGH SUBBASIN 52C6 TO CP 52C6C
 453          RK    3100    .035    .045            TRAP      10      10
```

```
                *
454             KK    52C6
455             KM   RUNOFF FROM SUBBASIN 52C6
456             BA    .036
457             LS              75     31.4
458             UK     100     .02      .10     100
459             RK    3100    .035     .045            TRAP      30      10
                *

460             KK   52C6C
461             KM   COMBINE 52C5R AND 52C6
462             HC       2
                *

463             KK   52C6R
464             KM   ROUTE 52C6C THROUGH SUBBASIN 52C10 TO CP 52C10C2
465             RK     450    .032     .045            TRAP      10      10
                *
1                                          HEC-1 INPUT                                                    PAGE 14
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

466             KK  51C2DV
467             KM   RETRIEVE 52C2DV
468             DR  51C2DV
                *

469             KK   51C3R
470             KM   ROUTE 52C2DV THROUGH SUBBASIN 52C7 TO CP 52C7C
471             RK     700    .040     .045            TRAP      10      10
                *

472             KK     51B     SUB
473             KM         RUNOFF FROM SUB 51B
474             BA   .5711
475             LS       0    71.9     13.1
476             UK     100   .0213      .10     100
477             RK    8900   .0300     .045            TRAP      50      25
                *

478             KK   51B1D
479             KM   DIVERT 92 PERCENT OF SUBBASIN 51B TO WEST (8 PERCENT TO SOUTH)
480             DT  51B1DV
481             DI       0   10000
482             DQ       0    9200
                *

483             KK   51B1R
484             KM    ROUTE 51B1D THROUGH SUBBASIN 52C7 TO CP 52C7C
485             RK     450     .04     .045            TRAP      10      10
                *

486             KK    52C7
487             KM   RUNOFF FROM SUBBASIN 52C7
488             BA    .006
489             LS              75      27
490             UK     100     .02      .10     100
491             RK     550     .04     .045            TRAP      30      10
                *

492             KK   52C7C
493             KM   COMBINE 51B1R, 51C3R, AND 52C7
494             HC       3   .0693
                *

495             KK   52C7R
496             KM   ROUTE 52C7C THROUGH SUBBASIN 52C9 TO CP 52C9C1
497             RK    1550    .036     .045            TRAP      10      10
                *

498             KK  51B1DV
499             KM   RETRIEVE DIVERTED FLOW 51B1DV
500             DR  51B1DV
                *
1                                          HEC-1 INPUT                                                    PAGE 15
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

501             KK   51B2D
502             KM   DIVERT 84 PERCENT OF 51B1DV TO WEST (16 PERCENT TO SOUTH)
503             DT  51B2DV
504             DI       0   10000
505             DQ       0    8400
                *

506             KK   51B2R
507             KM   ROUTE 51B2D THROUGH SUBBASIN 52C8 TO CP 52C8C
508             RK     750    .034     .045            TRAP      10      10
                *
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```
 509          KK    52C8
 510          KM   RUNOFF FROM SUBBASIN 52C8
 511          BA    .008
 512          LS              75       27
 513          UK     100     .02      .10     100
 514          RK     750    .034     .045            TRAP       30       10
              *

 515          KK   52C8C
 516          KM   COMBINE 51B2R AND 52C8
 517          HC       2   .4493
              *

 518          KK   52C8R
 519          KM   ROUTE 52C8C THROUGH SUBBASIN 52C9 TO CP 52C9C1
 520          RK    1100    .036     .045            TRAP       10       10
              *

 521          KK  52C9C1
 522          KM   COMBINE 52C7R AND 52C8R
 523          HC       2
              *

 524          KK  52C9R1
 525          KM   ROUTE 52C9C1 THROUGH SUBBASIN 52C9 TO CP 52C9C2
 526          RK    1050    .036     .045            TRAP       10       10
              *

 527          KK    52C9
 528          KM   RUNOFF FROM SUBBASIN 52C9
 529          BA    .069
 530          LS              75   31.85
 531          UK     100     .02      .10     100
 532          RK    3150    .036     .045            TRAP       30       10
              *

 533          KK  52C9C2
 534          KM   COMBINE 52C9R1 AND 52C9
 535          HC       2
              *
1                                        HEC-1 INPUT                                                    PAGE 16

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

 536          KK  52C9R2
 537          KM   ROUTE 52C9C2 THROUGH SUBBASIN 52C10 TO CP 52C10C1
 538          RK     500    .032     .045            TRAP       10       10
              *

 539          KK  2C10C1
 540          KM   COMBINE 52C9R2 AND 52C6R
 541          HC       2
              *

 542          KK  2C10R1
 543          KM   ROUTE 52C10C1 THROUGH SUBBASIN 52C10 TO CP 52C10C2
 544          RK     300    .032     .045            TRAP       10       10
              *

 545          KK   52C10
 546          KM   RUNOFF FROM SUBBASIN 52C10
 547          BA    .014
 548          LS              75    7.85
 549          UK     100     .02      .10     100
 550          RK     800    .032     .045            TRAP       30       10
              *

 551          KK  2C10C2
 552          KM   COMBINE 52C10R1 AND 52C10
 553          HC       2
              *

 554          KK   52C11
 555          KM   RUNOFF FROM SUBBASIN 52C11
 556          BA   .0425
 557          LS              75       27
 558          UK     100     .02      .10     100
 559          RK    2800    .031     .045            TRAP       30       10
              *

 560          KK  2C11R1
 561          KM   PIPE ROUTE 52C11 TO CP 52C11C
 562          RK     650     .02     .045            CIRC        3
              *

 563          KK  52C13D
 564          KM   RETRIEVE DIVERTED FLOW
 565          DR   STORM
              *

 566          KK  52C11C
 567          KM   COMBINE 52C13D AND 52C11R1
```

```
 568          HC       2   .0655
              *
1                                          HEC-1 INPUT                                                    PAGE 17
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 569          KK  2C11CR
 570          KM   PIPE ROUTE 52C11C TO CP 52C11C2
 571          RK     750     .02    .045            CIRC       3
              *

 572          KK  2C11C2
 573          KM   COMBINE 52C11CR AND 52C10C2
 574          HC       2
              *

 575          KK  2C11R2
 576          KM   ROUTE 52C11C2 THROUGH SUBBASIN 52C12 TO CP 52C12C
 577          RK     700     .03    .045            TRAP      10      10
              *

 578          KK   52C12
 579          KM   RUNOFF FROM SUBBASIN 52C12
 580          BA    .023
 581          LS              75      85
 582          UK     100     .02     .10     100
 583          RK     900     .03    .045            TRAP      30      10
              *

 584          KK  52C12C
 585          KM   COMBINE 52C11R2 AND 52C12
 586          HC       2
              *

 587          KK  52C12R
 588          KM   ROUTE 52C12C THROUGH SUBBASIN 52C14 TO CP 52C14C1
 589          RK    1150    .029    .045            TRAP      10      10
              *

 590          KK  52C14B
 591          KM   RUNOFF FROM SUBBASIN 52C14B
 592          BA    .021
 593          LS              75      60
 594          UK     100     .02     .10     100
 595          RK    1250    .029    .045            TRAP      30      10
              *

 596          KK  C14BC1
 597          KM   COMBINE 52C14B AND 52C12R
 598          HC       2
              *

 599          KK  C14BC2
 600          KM   COMBINE 52C14BC1 AND 52C14AR
 601          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE 18
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 602          KK  52C14R
 603          KM   ROUTE 52C14C3 WEST IN BEARDSLEY CHANNEL TO CP 52B5C2
 604          RK     600   .0143    .035            TRAP      50       4
              *

 605          KK  51B2DV
 606          KM   RETRIEVE DIVERTED FLOW
 607          DR  51B2DV
              *

 608          KK   51B3D
 609          KM   DIVERT 84 PERCENT OF 51B2DV TO WEST (16 PERCENT TO SOUTH)
 610          DT  51B3DV
 611          DI       0   10000
 612          DQ       0    8400
              *

 613          KK   51B3R
 614          KM   ROUTE 51B3D THROUGH SUBBASIN 52B1 TO CP 52B1C
 615          RK     600    .039    .045            TRAP      10      10
              *

 616          KK    52B1
 617          KM   RUNOFF FROM SUBBASIN 52B1
 618          BA    .003
 619          LS              75      27
 620          UK     100     .02     .10     100
 621          RK     600    .039    .045            TRAP      30      10
              *

 622          KK   52B1C
```

```
623          KM   COMBINE 51B3R AND 52B1
624          HC       2   .0736
             *

625          KK   52B1R
626          KM   ROUTE 52B1C THROUGH SUBBASIN 52B2 TO CP 52B2C1
627          RK     930    .037    .045            TRAP      10       10
             *

628          KK  51B3DV
629          KM   RETRIEVE DIVERTED FLOW 51B3DV
630          DR  51B3DV
             *

631          KK   51B4D
632          KM   DIVERT 82 PERCENT OF 51B3DV TO WEST (18 PERCENT TO SOUTH)
633          DT  51B4DV
634          DI       0   10000
635          DQ       0    8200
             *
1                                        HEC-1 INPUT                                                    PAGE 19
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

636          KK  51B4R1
637          KM   ROUTE 51B4D THROUGH SUBBASIN 52B2 TO CP 52B2C1
638          RK    1350    .037    .045            TRAP      10       10
             *

639          KK  52B2C1
640          KM   COMBINE 51B4R1 AND 52B1R
641          HC       2   .1403
             *

642          KK  52B2R1
643          KM   ROUTE 52B2R1 THROUGH SUBBASIN 52B2 TO CP 52B2C2
644          RK    1000    .037    .045            TRAP      10       10
             *

645          KK    52B2
646          KM   RUNOFF FROM SUBBASIN 52B2
647          BA    .032
648          LS              75      17
649          UK     100     .02     .10     100
650          RK    2350    .037    .045            TRAP      30       10
             *

651          KK  52B2C2
652          KM   COMBINE 52B2 AND 52B2R1
653          HC       2
             *

654          KK  52B2R2
655          KM   ROUTE 52B2C2 THROUGH SUBBASIN 52B3 TO CP 52B3C2
656          RK     850    .026    .045            TRAP      10       10
             *

657          KK  52B3R1
658          KM   ROUTE 52B3C1 THROUGH SUBBASIN 52B3 TO CP 52B3C2
659          RK     500    .024    .045            TRAP      10       10
             *

660          KK    52B3
661          KM   RUNOFF FROM SUBBASIN 52B3
662          BA    .062
663          LS              75    31.8
664          UK     100     .02     .10     100
665          RK    3450    .030    .045            TRAP      30       10
             *

666          KK  52B3C2
667          KM   COMBINE 52B3 AND 52B3R1
668          HC       2
             *
1                                        HEC-1 INPUT                                                    PAGE 20
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

669          KK  52B3R2
670          KM   ROUTE 52B3C2 THROUGH 52B4 TO CP 52B4C
671          RK    1700    .024    .045            TRAP      10       10
             *

672          KK    52B4
673          KM   RUNOFF FROM SUBBASIN 52B4
674          BA    .026
675          LS              75      62
676          UK     100     .02     .10     100
677          RK    1700    .024    .045            TRAP      30       10
             *
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 678          KK   52B4C
 679          KM   COMBINE 52B4 AND 52B3R2
 680          HC       2
              *

 681          KK   52B4R
 682          KM   ROUTE 52B4C THROUGH SUBBASIN 52B5 TO CP 52B5C1
 683          RK     550    .027    .045            TRAP      10       10
              *

 684          KK    52B5
 685          KM   RUNOFF FROM SUBBASIN 52B5
 686          BA    .021
 687          LS              75    56.9
 688          UK     100     .02     .10     100
 689          RK    1400     .03    .045            TRAP      30       10
              *

 690          KK  52B5C1
 691          KM   COMBINE 52B5 AND 52B4R
 692          HC       2
              *

 693          KK  52B5C2
 694          KM   COMBINE 52B5C1 AND 52C14R
 695          HC       2
              *

 696          KK   52B5R
 697          KM   ROUTE 52B5C2 IN BEARDSLEY CHANNEL TO CP 52B7C2
 698          RK    1100   .0143    .035            TRAP      50        4
              *

 699          KK  51B4DV
 700          KM   RETRIEVE DIVERTED FLOW 51B4DV
 701          DR  51B4DV
              *
```



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

 702          KK   51B5D
 703          KM   DIVERT 68 PERCENT OF 51B4DV TO WEST (32 PERCENT TO SOUTH)
 704          DT  51B5DV
 705          DI       0   10000
 706          DQ       0    6800
              *

 707          KK   51B5R
 708          KM   ROUTE 51B5D THROUGH SUBBASIN 52B6 TO CP 51B7C
 709          RK    1250    .035    .045            TRAP      10       10
              *

 710          KK  51B5DV
 711          KM   RETRIEVE DIVERTED FLOW
 712          DR  51B5DV
              *

 713          KK   51B6D
 714          KM   DIVERT 53 PERCENT OF 51B5DV TO WEST (47 PERCENT TO SOUTH)
 715          DT  51B6DV
 716          DI       0   10000
 717          DQ       0    5300
              *

 718          KK   51B6R
 719          KM   ROUTE 51B6D THROUGH SUBBASIN 52B6 TO CP 51B7C
 720          RK     925    .033    .045            TRAP      10       10
              *

 721          KK  51B6DV
 722          KM   RETRIEVE DIVERTED FLOW 51B6DV
 723          DR  51B6DV
              *

 724          KK   51B7D
 725          KM   DIVERT 58 PERCENT OF 51B6DV TO WEST (42 PERCENT TO SOUTH)
 726          DT  51B7DV
 727          DI       0   10000
 728          DQ       0    5800
              *

 729          KK  51B7R1
 730          KM   ROUTE 51B7D THROUGH SUBBASIN 52B6 TO CP 51B7C
 731          RK     530    .033    .045            TRAP      10       10
              *

 732          KK   51B7C
 733          KM   COMBINE 51B7R1, 51B5R, AND 51B6R
 734          HC       3   .2404
              *
```

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

 735          KK  51B7R2
 736          KM   ROUTE 51B7C THROUGH SUBBASIN 52B6 TO CP 52B6C
 737          RK    2300    .033    .045            TRAP      10       10
              *

 738          KK    52B6
 739          KM   RUNOFF FROM SUBBASIN 52B6
 740          BA    .096
 741          LS              75   13.55
 742          UK     100     .02     .10     100
 743          RK    3200    .033    .045            TRAP      30       10
              *

 744          KK   52B6C
 745          KM   COMBINE 51B7R2 AND 52B6
 746          HC       2
              *

 747          KK   52B6R
 748          KM   ROUTE 52B6C THROUGH SUBBASIN 52B7 TO CP 52B7C1
 749          RK    2750    .028    .045            TRAP      10       10
              *

 750          KK    52B7
 751          KM   RUNOFF FROM SUBBASIN 52B7
 752          BA    .080
 753          LS              75   78.45
 754          UK     100     .02     .10     100
 755          RK    2750    .028    .045            TRAP      30       10
              *

 756          KK  52B7C1
 757          KM   COMBINE 52B7 AND 52B6R
 758          HC       2
              *

 759          KK  52B7C2
 760          KM   COMBINE 52B7C1 AND 52B5R
 761          HC       2
              *

 762          KK    52A2
 763          KM   RUNOFF FROM SUBBASIN 52A2
 764          BA    .065
 765          LS              75    88.8
 766          UK     100     .02     .10     100
 767          RK    2900    .023    .045            TRAP      30       10
              *
```



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

 768          KK  52A2C2
 769          KM   COMBINE 52B7C2 AND 52A2
 770          HC       2    1.62
              *

 771          KK  51B7DV
 772          KM   RETRIEVE DIVERTED FLOW 51B7DV
 773          DR  51B7DV
              *

 774          KK   51B8R
 775          KM   ROUTE 51B7DV THROUGH SUBBASIN 52A1 TO CP 52A1C
 776          RK    3400    .033    .045            TRAP      10       10
              *

 777          KK    52A1
 778          KM   RUNOFF FROM SUBBASIN 52A1
 779          BA    .130
 780          LS              75   32.25
 781          UK     100     .02     .10     100
 782          RK    3400    .033    .045            TRAP      30       10
              *

 783          KK   52A1C
 784          KM   COMBINE 52A1 AND 51B8R
 785          HC       2
              *
              *
              *     ******************  END DC RANCH WATERSHED  ******************
              *
              *
              *     *****************  BEGIN GVSCE MODIFICATIONS  *****************
              *

 786          KK   D51.1
 787          KM   RETRIEVE DIVERTED FLOW
```

```
 788          DR  B51.1T
              *

 789          KK    C52A
 790          KM     COMBINE ROUTED HYDROGRAPH FROM C51.1 WITH HYDROGRAPH FROM C52A1C AT
 791          KM     THOMPSON PEAK PARKWAY
 792          HC       2  6.2735
              *
              *   R52A
              *     DEER VALLEY BASIN OUTLET CONDUIT TO OUTLET AT SIERRA PINTA CHANNEL
              *     COMBINE WITH RUNOFF FROM DC RANCH
              *       L = 3130 feet
              *
1                                          HEC-1 INPUT                                          PAGE 24
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 793          KK     C52
 794          KM     COMBINE ROUTED HYDROGRAPH FROM C52A WITH HYDROGRAPH FROM C52A2C AT
 795          KM     BEARDSLEY ROAD
 796          HC       2  7.9160
              *

 797          KK     R52
 798          KM     NORMAL DEPTH CHANNEL ROUTE FROM C52 TO C53 THROUGH PIMA CHANNEL
 799          RS       1    FLOW      -1
 800          RC   0.022   0.022   0.022    4050    0.01
 801          RX    1000    1012    1020    1028    1058    1066    1074    1086
 802          RY     107     104     102     100     100     102     104     107
              *

 803          KK    D52T
 804          KM     DIVERT 100% OF FLOW TO RETRIEVE JUST U/S OF THE OUTER LOOP DETENTION BASIN
 805          DT    B52T
 806          DI       0   10000
 807          DQ       0   10000
              *

 808          KK   CLEAR
 809          KM     CLEAR HYDROGRAPHS FROM STACK
 810          HC       2
              *
              *
              *
              *     ****************  BEGIN GRAYHAWK WATERSHED  ******************
              *
              *       THE GREYHAWK HEC-1 MODEL (VILLAGES II AND III) WAS DEVELOPED BY DEI
              *           DEI FILE NAME:  GH23FAB.HII
              *           MODEL DATE:     21 MAY 96
              *

 811          KK     37A     SUB
 812          KM         RUNOFF FROM SUB-BASIN 37A
 813          BA   .6765
 814          LS              74    24.8
 815          UK      61   .0213     .10     100
 816          RK    4800   .0237    .045            TRAP      50     130
              *

 817          KK    37AE     DIV
 818          KM         SPLIT FLOWS AT SOUTH BOUNDARY OF SUB 37A FOR ROUTING TO DETENTION
 819          KM         BASIN 53R & 38R-1.  THIS DIVERT OPERATION REFLECTS THE BREAK IN THE
 820          KM         DEER VALLEY ROAD CHANNEL BETWEEN HAYDEN & PIMA ROADS.  THIS SPLIT IS
 821          KM         BASED ON NEW CORE NORTH PLAN DEVELOPED BY G.W. LARSON & ASSC., INC.
 822          KM         DATED 6/16/92.  DIVERT RATIO IS BASED ON APPROXIMATE D.A. FROM SUB 37A
 823          KM         THAT IS INTERCEPTED BY EACH CHANNEL SEGMENT ALONG DEER VALLEY ROAD.
 824          KM
 825          KM         (THIS SPLIT HAS BEEN UPDATED FROM THE OLP.6 MODEL TO REFLECT A 30% SPLIT
 826          KM         TO THE SOUTH AND A 70% SPLIT TO THE WEST FOR THIS STUDY AND IS BASED ON
 827          KM         UPSTREAM CONTRIBUTING WATERSHED AREA TO THIS CONCENTRATION POINT)
 828          DT    37AW
1                                          HEC-1 INPUT                                          PAGE 25
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 829          DI       0     100     500    1000    1500
 830          DQ       0      70     350     700    1050
              *

 831          KK   37AE1      CP
 832          KM         ROUTE NON-DIVERTED FLOW FROM DIV 37AE THROUGH SUB 5N.  THIS IS A
 833          KM         PRELIMINARY CHANNEL CONFIGURATION FOR THE GOLF COURSE CHANNEL.
 834          RS       1    FLOW
 835          RC    .055    .045    .055     800    .025
 836          RX       0      16      26      30      40      44      54      70
 837          RY       6       2       2       0       0       2       2       6
              *

 838          KK   SUB5N
 839          KM         RUNOFF FROM SUBBASIN 5 IN NORTH 18 MODEL.
 840          BA   0.029
 841          LS              77      18
```

```
842        UK     100    .013     .15     100
843        RK    1000   0.005    .018    .015    TRAP      50      20
844        RK     500    .015    .025            TRAP      10       4
           *

845        KK    CP5N
846        KM        ADD HYDROGRAPHS AT CP5N
847        HC       2   0.232
           *

848        KK   RET5N
849        KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 5.  18" PIPE OUTFLOW WILL
850        KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
851        RS       1    STOR       0       0
852        SV       0     .04     .33     .93     1.8    2.35    3.16     4.2     6.1
853        SQ       0       8      10      12      15      17     102     191     668
854        SE    1797    1798    1800    1802    1804    1805    1806    1807    1808
           *

855        KK   R6N.1
856        KM        ROUTE FLOW FROM CP5 TO CP6 IN NORTH 18 MODEL
857        KM        ASSUME CHANNEL IS SAME CONFIGURATION AS ABOVE FOR PROPOSED GOLF COURSE
858        KM        CHANNEL.
859        RS       1    FLOW
860        RC    .055    .045    .055    2200    .025
861        RX       0      16      26      30      40      44      54      70
862        RY       6       2       2       0       0       2       2       6
           *

863        KK   SUB6B
864        KM        RUNOFF FROM WEST PORTION OF EXISTING SUB6N ADJACENT TO CHANNEL
865        BA    .032
866        LS              81       0
867        UK     200    .025     .15     100
868        RK    1300    .015    .025            TRAP      10       4
           *
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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

869        KK    SR6B
870        KM        ROUTE FLOW THROUGH RETENTION BASIN IN DRIVING RANGE CHANNEL
871        RS       1    STOR       0       0
872        SV       0     .17     .57    1.12    1.78
873        SQ       0       8      10     120     380
874        SE    1772    1773    1774    1775    1776
           *

875        KK   CP6.1
876        KM        ADD HYDROGRAPHS AT CP6.1
877        HC       2
           *

878        KK   SUB1N
879        KM        RUNOFF FROM SUBBASIN 1N
880        BA    .019
881        LS              77      18
882        UK     100    .013     .15     100
883        RK    1470   .0204    .018            TRAP      50      20
           *

884        KK    R2NA
885        KM        ROUTE FLOW FROM CP1 TO CP2NA
886        RS       1    FLOW
887        RC     .03     .03     .03     400    .025
888        RX       0       8      13      17      22      26      31      39
889        RY       4       2       2       0       0       2       2       4
           *

890        KK  SUB2NA
891        KM        RUNOFF FROM SUBBASIN 2NA
892        BA    .015
893        LS              81       0
894        UK     150    .013     .15     100
895        RK    1050   .0215    .025            TRAP      20       6
           *

896        KK   CP2NA
897        KM        ADD HYDROGRAPHS AT CP2NA
898        HC       2
           *

899        KK   SR2NA
900        KM        ROUTE FLOW THROUGH DETENTION BASIN IN SUB2NA
901        RS       1    STOR       0       0
902        SV       0    .076    .291    .708     1.2
903        SQ       0       0       0       0     160
904        SE    1772    1773    1774    1775    1776
           *
```



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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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905          KK    R2NB
906          KM        ROUTE FLOW FROM CP2NA TO CP2NB
907          RS       1    FLOW
908          RC     .03     .03     .03    1050    .015
909          RX       0       8      13      17      22      26      31      39
910          RY       4       2       2       0       0       2       2       4
             *

911          KK  SUB2NB
912          KM        RUNOFF FROM SUBBASIN 2NB
913          BA     .03
914          LS              77      53
915          UK     150    .013     .15     100
916          RK    1200    .015    .025            TRAP      20      50
             *

917          KK   CP2NB
918          KM        ADD HYDROGRAPHS AT CP2NB
919          HC       2
             *

920          KK   SR2NB
921          KM        STORAGE ROUTE FLOW THROUGH DETENTION BASIN IN SUB2NB
922          RS       1    STOR       0       0
923          SV       0     .19     .69    1.66    3.23     4.5
924          SQ       0       2       8      12      17     170
925          SE    1796    1798    1800    1802    1804    1805
             *

926          KK   RCP4N
927          KM        ROUTE FLOW FROM CP2NB TO CP4N
928          RS       1    FLOW
929          RC     .03     .03     .03     740    .018
930          RX       0       8      13      17      22      26      31      39
931          RY       4       2       2       0       0       2       2       4
             *

932          KK   SUB6N
933          KM        RUNOFF FROM SUBBASIN 6 IN NORTH 18 MODEL.  TO LAKE NORTH OF CLUBHOUSE.
934          BA    .049
935          LS              81       0
936          UK     200    .025     .15     100
937          RK    1300    .015    .025            TRAP      10       4
             *

938          KK   RET6N
939          KM        RETENTION ROUTING THROUGH LAKE AT HOLE 18, NORTH COURSE.
940          RS       1    STOR
941          SV       0    3.01    6.64   10.75   13.09   15.90
942          SQ       0       0       0      10      26     100
943          SE    1782    1784    1786    1788    1789    1790
             *
```

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

944          KK  RCP4N1
945          KM        ROUTE FLOW FROM CP6N TO CP4N
946          RS       1    FLOW
947          RC     .03     .03     .03     550    .018
948          RX       0       8      13      17      22      26      31      39
949          RY       4       2       2       0       0       2       2       4
             *

950          KK  CP4N.1
951          KM        ADD HYDROGRAPHS AT CP4N.1
952          HC       2
             *

953          KK   SUB3N
954          KM        RUNOFF FROM SUBBASIN 3N, NORTH 18 MODEL
955          BA    .027
956          LS              81       0
957          UK     100     .02     .15     100
958          RK    2800  0.0207    .025            TRAP      10       4
             *

959          KK   RET3N
960          KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 3.  18" PIPE OUTFLOW WILL
961          KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
962          RS       1    STOR       0       0
963          SV       0    1.73    8.97   13.32   15.74
964          SQ       0       4       7       9      11
965          SE    1793    1795    1800    1803    1804
             *

966          KK     R4N
967          KM        ROUTE FLOW FROM CP3N TO CP4N IN NORTH MODEL
968          RS       1    FLOW
969          RC    .035    .035    .035     950    .018
```

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 970          RX       0       8      13      17      22      26      31      39
 971          RY       4       2       2       0       0       2       2       4
              *

 972          KK  CP4N.2
 973          KM        ADD HYDROGRAPHS AT CPN.2
 974          HC       2
              *

 975          KK   SUB4N
 976          KM        RUNOFF FROM SUBBASIN 4N.
 977          BA    .032
 978          LS              77      18
 979          UK     100    .015     .15     100
 980          RK    1200   0.007    .018            TRAP      50      20
              *
1                                        HEC-1 INPUT                                                    PAGE 29

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

 981          KK    CP4N
 982          KM        ADD HYDROGRAPHS AT CP4N
 983          HC       2
              *

 984          KK     R6N
 985          KM        ROUTE FLOW FROM CP4N TO CP6N ALONG THOMPSON PEAK PKWY AT CLUBHOUSE
 986          RS       1    FLOW
 987          RC    .045    .035    .045     750    .025
 988          RX       0       8      13      17      22      26      31      39
 989          RY       4       2       2       0       0       2       2       4
              *

 990          KK   SUB6A
 991          KM        RUNOFF FROM SUBBASIN 6A (CLUBHOUSE AREA NORTH OF THOMPSON PEAK PKWY).
 992          BA    .013
 993          LS              83      68
 994          UK     100    .015     .12     100
 995          RK     800     .01    .025            TRAP       2       3
              *

 996          KK   CP6.2
 997          KM        ADD HYDROGRAPHS AT CP6.2
 998          HC       2
              *

 999          KK    CP6N
1000          KM        ADD HYDROGRAPHS AT CP6N
1001          HC       2
              *
              *       ABOVE DISCHARGE FROM NORTH 18 THROUGH BRIDGE AT TPP STATION 103+45
              *

1002          KK   RCP6N
1003          KM        ROUTE FLOW FROM CP6N TO CP3C
1004          RS       1    FLOW
1005          RC    .045    .035    .045     300    .015
1006          RX       0       8      13      17      37      45      51      59
1007          RY       4       2       2       0       0       2       2       4
              *

1008          KK   SUB3C
1009          KM        RUNOFF FROM SUBBASIN 3C, SOUTH COURSE AT MAINTENANCE FACILITY.
1010          BA   .0104
1011          LS              77      68
1012          UK     100    .025     .02     100
1013          RK     600    .015    .035            TRAP      50      20
              *
1                                        HEC-1 INPUT                                                    PAGE 30

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

1014          KK    CP3C
1015          KM        COMBINE NORTH COURSE HYDROGRAPH WITH FIRST SOUTH COURSE HYDROGRAPH
1016          HC       2
              *

1017          KK     R3C
1018          KM        ROUTE FLOW FROM SUB3C TO CP3 THROUGH GC1018
1019          KM        ASSUME CHANNEL IS SAME CONFIGURATION AS ABOVE FOR PROPOSED GOLF COURSE
1020          KM        CHANNEL.
1021          RS       1    FLOW
1022          RC    .055    .045    .055    2050    .025
1023          RX       0      20      30      40      60      70      80     100
1024          RY    1650    1746    1744    1742    1742    1744    1746    1750
              *

1025          KK  GC1018
1026          KM        RUNOFF FROM HOLES NO. 10, 18 AND DRIVING RANGE THAT CONTRIBUTE TO WASH
1027          BA    .044
1028          LS              81       0
```

```
1029        UK     200    .025     .15     100
1030        RK    1800   .0233    .025            TRAP      10       4
            *

1031        KK   GC1-9
1032        KM        RUNOFF FROM GOLF COURSE HOLES 1 & 9 CONTRIBUTING TO WASH
1033        BA    .026
1034        LS              81       0
1035        UK     200    .025     .15     100
1036        RK    2110    .022    .025            TRAP      10       4
            *

1037        KK   SUB3S
1038        KM        RUNOFF FROM SUB BASIN 3 SOUTH COURSE
1039        BA   .0102
1040        LS              77      53
1041        UK     100    .010     .15     100
1042        RK     930    .016    .025            TRAP      50      20
            *

1043        KK    CP3S
1044        KM        COMBINE HYDROGRAPHS AT CP3 SOUTH COURSE
1045        HC       4
            *

1046        KK    RT3S
1047        KM        ROUTE FLOW FROM CP3S TO CPGC28
1048        RS       1    FLOW       0       0
1049        RC    .055    .045    .055     900    .023
1050        RX       0      20      30      40      60      70      80     100
1051        RY    1750    1746    1744    1742    1742    1744    1746    1750
            *
1                                          HEC-1 INPUT                                                    PAGE 31

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

1052        KK   SUB4S
1053        KM        RUNOFF FROM SUB BASIN 4 SOUTH COURSE
1054        BA   .0273
1055        LS              77      53
1056        UK     100    .010     .15     100
1057        RK    1780    .018    .015            TRAP      50      20
            *

1058        KK    RT4S
1059        KM        ROUTE FLOW FROM CP4S TO CPGC28
1060        RS       1    FLOW       0       0
1061        RC    .035    .035    .035     650    .015
1062        RX       0      20      30      40      45      55      65      75
1063        RY    1750    1746    1744    1742    1742    1744    1746    1750
            *

1064        KK   GC2-8
1065        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES NO. 2 AND 8
1066        BA    .014
1067        LS              81       0
1068        UK     200    .025     .15     100
1069        RK     980    .016    .025            TRAP      10       4
            *

1070        KK  1PGC28
1071        KM        ADD HYDROGRAPHS AT CPGC28 AT PROPOSED LOOP ROAD, SOUTH COURSE
1072        HC       3
            *

1073        KK  SUB3D3
1074        KM        RUNOFF FROM GRAYHAWK ROAD SOUTH OF THOMPOSON PEAK
1075        BA    .014
1076        LS              81       0
1077        UK      50    .015      .1     100
1078        RK    2450    .016    .025            TRAP       5       4
            *

1079        KK  CPGC28
1080        KM        ADD HYDROGRAPHS AT CPGC28 AT PROPOSED LOOP ROAD, SOUTH COURSE
1081        HC       2
            *

1082        KK  SRGC28
1083        KM        STORAGE THRU DETENTION BASIN ON HOLES 2 AND 8.
1084        RS       1    STOR       0       0
1085        SV       0    .018    .085     .22      .5     1.0     1.7    2.68     3.9
1086        SE    1706    1707    1708    1709    1710    1711    1712    1713    1714
1087        SQ       0      10      18      20      30     108     324     651    1070
            *
1                                          HEC-1 INPUT                                                    PAGE 32

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

1088        KK    RT7S
1089        KM        ROUTE FLOW FROM SRGC28 TO CP7S
```

```
1090        RS       1    STOR       0       0
1091        RC    .055    .045    .055    1700   .0187
1092        RX       0      20      30      40      60      70      80     100
1093        RY    1750    1746    1744    1742    1742    1744    1746    1750
            *

1094        KK     GC7
1095        KM        RUNOFF FROM SOUTH GOLF COURSE HOLE NO. 7
1096        BA   .0134
1097        LS              81       0
1098        UK     200    .025     .15     100
1099        RK    1380    .020    .025            TRAP      10       4
            *

1100        KK    CP7S
1101        KM        ADD HYDROGRAPHS AT CP7S ON SOUTH COURSE
1102        HC       2  0.6083
            *

1103        KK    D7ST
1104        KM        D7ST IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1105        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1106        KM
1107        KM        DIVERT 100% OF FLOW
1108        DT    B7ST
1109        DI       0   10000
1110        DQ       0   10000
            *

1111        KK   CLEAR
1112        KM        CLEAR HYDROGRAPHS FROM THE STACK.
1113        HC       2
            *
            *
            * THIS PORTION OF MODEL TAKEN FROM,"DRAINAGE REPORT FOR VILLAGE 3 - PHASE 1",
            * APPROVED BY THE CITY OF SCOTTSDALE 7-19-95.  MODIFIED TO ACCOUNT FOR ASBUILT
            * CONDITION
            *
            *
            *
            *

1114        KK  SUB3D1
1115        KM        RUNOFF FROM SUBBASIN 3D1, PARCEL 3D.
1116        BA   .0088
1117        LS              77      34
1118        UD     .06
            *
```



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

1119        KK   RD1B1
1120        KM        FOUTE FLOW FROM 3D1 TO 3B1
1121        RS       1    FLOW      -1
1122        RC    0.03    0.03    0.03    1250    .015
1123        RX       0     0.5       1       7      12      19    19.5      20
1124        RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
            *

1125        KK  SUB3B1
1126        KM        RUNOFF FROM SUBBASIN 3B1, PARCEL 3B.
1127        BA   .0137
1128        LS              77      47
1129        UD     .06
            *

1130        KK   CP3B1
1131        KM        ADD HYDROGRAGHS AT CP3B1
1132        HC       2
            *

1133        KK   RB13F
1134        KM        ROUTE FLOW FROM 3B1 TO SUB3F
1135        RS       1    FLOW      -1
1136        RC    0.03    0.03    0.03    2150    .015
1137        RX       0     0.5       1       7      17      24    24.5      25
1138        RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
            *

1139        KK   SUB3F
1140        KM        RUNOFF FROM SUBBASIN 3F, PARCEL 3F, SOUTH COURSE MODEL.
1141        BA   .0344
1142        LS              77      68
1143        UK     100    .025     .15     100
1144        RK    1000    .015    .025            TRAP     100      20
            *

1145        KK    CP3F
1146        KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3F ALONG THE POWER CORRIDOR
1147        HC       2
            *
```

```
1148          KK  SUB3B2
1149          KM        RUNOFF FROM SUBBASIN 3B2, PARCEL 3B.
1150          BA  .0246
1151          LS            77      40
1152          UD    .10
              *

1153          KK   RB2E1
1154          KM       1/2 OF ENTIRE ROUTING REACH FROM 3B2 TO CP3E1
1155          RS       1    FLOW      -1
1156          RC    0.03    0.03    0.03     800    0.02
1157          RX       0     0.5       1       7      17      24    24.5      25
1158          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *
1                                          HEC-1 INPUT                                                    PAGE 34

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

1159          KK   RB2E2
1160          KM      SECOND 1/2 OF ENTIRE ROUTING REACH FROM 3B2 TO CP3E1
1161          RS       1    FLOW      -1
1162          RC    0.03    0.03    0.03     600    .015
1163          RX       0     0.5       1       7      17      24    24.5      25
1164          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1165          KK  SUB3E1
1166          KM        RUNOFF FROM SUBBASIN 3E1, PARCEL 3E.
1167          BA  .0246
1168          LS            77      40
1169          UD    .10
              *

1170          KK  1CPE31
1171          KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3E1 ALONG THE POWER CORRIDOR
1172          HC       2
              *

1173          KK  SUB3D2
1174          KM        RUNOFF FROM SUBBASIN 3D2, PARCEL 3D.
1175          BA   .022
1176          LS            77      35
1177          UD    .08
              *

1178          KK   RD2E2
1179          KM        ROUTE EXCESS FROM 3D2 TO CP3E2
1180          RS       1    FLOW      -1
1181          RC    0.03    0.03    0.03    1200   .0216
1182          RX       0     0.5       1       7      17      24    24.5      25
1183          RY     3.2     3.1     3.0     1.0     1.0     3.0     3.1     3.2
              *

1184          KK  SUB3E2
1185          KM        RUNOFF FROM SUBBASIN 3E2, PARCEL 3E.
1186          BA   .012
1187          LS            77      35
1188          UD    .06
              *

1189          KK   CP3E2
1190          KM        ESTIMATED PEAK DISCHARGE RATE AT POINT CP3E2 ALONG THE POWER CORRIDOR
1191          HC       2
              *

1192          KK     PC3
1193          KM        PC3 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
1194          KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
1195          KM
1196          KM        RUNOFF FROM SUBBASIN PC3.
1197          BA  0.0434
1198          LS            77      10
1                                          HEC-1 INPUT                                                    PAGE 35

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

1199          UK     300    .015     .15     100
1200          RK    2200     .01     .03            TRAP      30       4
              *

1201          KK    CPC3
1202          KM        CPC3 IS A CONCENTRATION POINT ADDED BY GVSCE TO ESTIMATE THE INFLOW TO
1203          KM        THE POWER LINE CHANNEL AT THE HAYDEN ROAD CROSSING.
1204          KM
1205          KM        COMBINE ROUTED HYDROGRAPH FROM SRPC2 W/HYDROGRAPHS FROM CP3E1, CP3E2 AND
1206          KM        CP3F AND RUNOFF FROM PC3.
1207          HC       4  0.1835
              *

1208          KK   DPC3T
1209          KM        DPC3T IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
```

```
1210        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1211        KM
1212        KM        DIVERT 100% OF FLOW
1213        DT   BPC3T
1214        DI       0   10000
1215        DQ       0   10000
            *

1216        KK  SUB3E3
1217        KM        RUNOFF FROM SUBBASIN 3E3, PARCEL 3E.
1218        BA    .020
1219        LS              77       32
1220        UD     .06
            *

1221        KK     PC4
1222        KM        PC4 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
1223        KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
1224        KM
1225        KM        RUNOFF FROM SUBBASIN PC4.
1226        BA  0.0217
1227        LS              77        0
1228        UK    300    .015     .15     100
1229        RK   1100     .01     .03            TRAP      30        4
            *

1230        KK     D7S
1231        KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1232        KM        HILLS DETENTION BASIN VIA THE POWER LINE CHANNEL.
1233        KM
1234        KM        RETRIEVE DIVERTED FLOW
1235        DR    B7ST
            *

1236        KK    CPC4
1237        KM        THE HEC1 OPREATION TEMPAD IS CHANGED BY GVSCE TO ESTIMATE THE INFLOW TO
1238        KM        THE POWER LINE CHANNEL WHERE THE FLOW FROM CP7S ENTERS THE CHANNEL.
1239        KM
1240        KM        COMBINE HYDROGRAPH FROM CP3E3 W/RUNOFF FROM PC4.
1241        HC       3   0.650
            *
1                                        HEC-1 INPUT                                          PAGE 36

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

1242        KK   DPC4T
1243        KM        DPC3T IS A DIVERSION ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1244        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1245        KM
1246        KM        DIVERT 100% OF FLOW
1247        DT   BPC4T
1248        DI       0   10000
1249        DQ       0   10000
            *

1250        KK   CLEAR
1251        KM        CLEAR HYDROGRAPHS FROM THE STACK.
1252        HC       3
            *
            *
            *       THIS ENDS THE PORTION OF THE MODEL TAKEN FROM DRAINAGE REPORT
            *       FOR VILLAGE 3 - PHASE I HEC-1 MODEL BY GILBERTSON ASSOC. INC.
            *       DATED 7-19-95
            *
            *
            *
            * RETURN TO NORTH 18\VILLAGE 2\TPP3 MODEL.
            * THE REMAINDER OF THE SUBBASINS IN THIS  MODEL  WILL CONTRIBUTE TO THE
            * PROPOSED CHANNNEL IN THE POWER EASEMENT AS IDENTIFIED IN THE
            * "COMMUNITY DRAINAGE STUDY - CORE NORTH AND WILL DISCHARGE TO REGIONAL
            * RETENTION BASIN 38R1.
            *
            *

1253        KK    37AW     RET
1254        KM        RETRIEVE DIVERTED FLOW FROM SOUTH BOUNDARY OF SUB 37A TO REFLECT
1255        KM        BREAK IN DEER VALLEY ROAD CHANNEL BETWEEN HAYDEN & PIMA ROADS
1256        DR    37AW
            *

1257        KK    R14R
1258        KM        ROUTE FLOW FROM DIVERT AT DEER VALLEY ROAD (UPSTREAM OF SUBBAIN 5) TO
1259        KM        RET14.1
1260        RS       1    FLOW
1261        RC    .055    .045    .055    2900     .01
1262        RX       0      16      26      30      50      54      64      80
1263        RY       6       2       2       0       0       2       2       6
            * RET 141 HAS BEEN REVISED FOLLOWING REFINEMENT OF GRADING PLANS 11-16-94
            *

1264        KK  RET141
1265        KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 14.1.  18" PIPE OUTFLOW WILL
```

```
1266        KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1267        RS       1    STOR       0       0
1268        SV       0     .46    2.79    4.56    5.71    6.92    8.24
1269        SQ       0      11      15      22     147     463     968
1270        SE    1778    1785    1790    1792    1793    1794    1795
            *
```



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

1271        KK   R14.1
1272        KM        ROUTE FLOW FROM RET14.1 TO CP14
1273        KM        RET14.1
1274        RS       1    FLOW
1275        RC    .055    .045    .055    1900     .01
1276        RX       0      16      26      30      50      54      64      80
1277        RY       6       2       2       0       0       2       2       6
            *

1278        KK  SUB13N
1279        KM        RUNOFF FROM SUBBASIN 13 NORTH 18 MODEL.
1280        BA    .037
1281        LS              77      24
1282        UK     100    .015     .15     100
1283        RK    2400    .007    .018            TRAP      50      20
            *

1284        KK   R14.1
1285        KM        ROUTE FLOW FROM CP13 TO RET14 NORTH 18 MODEL.
1286        RS       1    FLOW
1287        RC    .055    .045    .055     950    .025
1288        RX       0       8      13      17      22      26      31      39
1289        RY       4       2       2       0       0       2       2       4
            *

1290        KK  SUB14N
1291        KM        RUNOFF FROM SUBBASIN 14 NORTH 18 MODEL.
1292        BA    .049
1293        LS              81       0
1294        UK     300    .025     .15     100
1295        RK    2300     .01    .025            TRAP      10       4
            *

1296        KK    CP14
1297        KM        ADD HYDROGRAPHS AT CP14
1298        HC       3  0.5595
            *

1299        KK   RET14
1300        KM        ROUTE FLOW THROUGH RETENTION BASIN NO. 14.  18" PIPE OUTFLOW WILL
1301        KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1302        RS       1    STOR       0       0
1303        SV       0     .08     .31    1.01    2.16    3.20    4.19    5.69     7.8
1304        SQ       0      14      16      18      20      22     155     464     750
1305        SE    1744    1746    1748    1750    1752    1753    1754    1755    1756
            *

1306        KK   R18.1
1307        KM        ROUTE FLOW FROM RET14 TO CP18
1308        RS       1    FLOW
1309        RC    .055    .045    .055     500    .016
1310        RX       0      16      26      34      54      68      78      96
1311        RY       6       2       2       0       0       2       2       6
            *
```



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

1312        KK  SUB20N
1313        KM        RUNOFF FROM SUBBASIN 20.
1314        BA    .024
1315        LS              77      24
1316        UK     200     .01     .15     100
1317        RK    1400     .02    .018            TRAP      50      20
            *

1318        KK     R19
1319        KM        ROUTE FLOW FROM CP20 TO CP19
1320        RS       1    FLOW
1321        RC    .035    .035    .035     700     .02
1322        RX       0       8      13      17      22      26      31      39
1323        RY       4       2       2       0       0       2       2       4
            *

1324        KK  SUB19N
1325        KM        RUNOFF FROM SUBBASIN 19.
1326        BA    .038
1327        LS              77      31
1328        UK     150     .01     .15     100
1329        RK    1800    .015    .018            TRAP      50      20
            *
```

```
1330          KK   CP19N
1331          KM        ADD HYDROGRAPHS  AT CP19N
1332          HC       2
              *

1333          KK   R18NC
1334          KM        ROUTE FLOW FROM  CP19N TO CP18NC
1335          RS       1    FLOW
1336          RC    .035    .035    .035     700    .013
1337          RX       0       8      13      17      27      31      36      44
1338          RY       4       2       2       0       0       2       2       4
              *

1339          KK  UB18NC
1340          KM        RUNOFF FROM SUBBASIN 18NC.
1341          BA    .021
1342          LS              77      42
1343          UK     100     .01     .15     100
1344          RK    1550     .02    .018            TRAP      50      20
              *

1345          KK  CP18NC
1346          KM        ADD HYDROGRAPHS  AT CP18NC (INCLUDES R18.1, R18, AND SUB18)
1347          HC       3
              *
```



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

1348          KK    RPC1
1349          KM        ROUTE FLOW FROM CP18N TO CPC1.
1350          RS       1    FLOW
1351          RC    .035    .035    .035     510    .013
1352          RX       0      16      26      34      64      78      88     106
1353          RY       6       2       2       0       0       2       2       6
              *

1354          KK  UB18NA
1355          KM        RUNOFF FROM SUBBASIN 18NA.
1356          BA    .022
1357          LS              77      42
1358          UK     100     .01     .15     100
1359          RK    1450     .02    .018            TRAP      50      20
              *

1360          KK   1RPC1
1361          KM        ROUTE FLOW FROM CP18NA TO CPC1.
1362          RS       1    FLOW
1363          RC    .035    .035    .035    2550     .01
1364          RX       0      16      26      34      64      78      88     106
1365          RY       8       4       2       0       0       2       4       8
              *

1366          KK  UB18NB
1367          KM        RUNOFF FROM SUBBASIN 18NB.
1368          BA   .0096
1369          LS              77      42
1370          UK     100     .01     .15     100
1371          RK     800     .02    .018            TRAP      50      20
              *

1372          KK   2RPC1
1373          KM        ROUTE FLOW FROM CP18NB TO CPC1.
1374          RS       1    FLOW
1375          RC    .035    .035    .035    2000     .01
1376          RX       0      16      26      34      64      78      88     106
1377          RY       8       4       2       0       0       2       4       8
              *

1378          KK     PC1
1379          KM        RUNOFF FROM SUBBASIN PC1.
1380          BA    .062
1381          LS              77      10
1382          UK     500    .015     .15     100
1383          RK    2700     .01     .03            TRAP      30       4
              *

1384          KK   1CPC1
1385          KM        ADD HYDROGRAPHS  AT CPC1.
1386          HC       3
              *
```



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

1387          KK   SRPC1
1388          KM        STOAGE ROUTE THROUGH DET BASIN IN POWER CORRIDOR.
1389          RS       1    STOR       0       0
1390          SV       0     .29     .73
1391          SQ       0       0     350
```

```
1392          SE    1747    1748    1749
              *

1393          KK    CPC1
1394          KM        ADD HYDROGRAPHS  AT CPC1.
1395          HC       2
              *

1396          KK  R16NA1
1397          KM        ROUTE FLOW FROM CPC1 TO C16NA1.
1398          RS       1    FLOW
1399          RC    .035    .035    .035     700    .013
1400          RX       0      16      26      34      74      88      98     116
1401          RY       8       4       2       0       0       2       4       8
              *

1402          KK  UB16NA
1403          KM        RUNOFF FROM SUBBASIN 16NA.
1404          BA   .0139
1405          LS             77      42
1406          UK     100    .015     .15     100
1407          RK    1500    .015    .022            TRAP      50      20
              *

1408          KK  R16NA1
1409          KM        ROUTE FLOW FROM CP16NA TO CP16NA1.
1410          RS       1    FLOW
1411          RC    .035    .035    .035     550    .013
1412          RX       0      16      26      34      44      58      68      86
1413          RY       6       2       2       0       0       2       2       6
              *

1414          KK  C16NA1
1415          KM        ADD HYDROGRAPHS  AT CP16NA1.
1416          HC       2
              *

1417          KK  R16NB1
1418          KM        ROUTE FLOW FROM CP16NA1 TO CP16NB1.
1419          RS       1    FLOW
1420          RC    .035    .035    .035     650    .013
1421          RX       0      16      26      34      74      88      98     116
1422          RY       8       4       2       0       0       2       4       8
              *
```



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

1423          KK  UB16NB
1424          KM        RUNOFF FROM SUBBASIN 16NB.
1425          BA   .0156
1426          LS             77      42
1427          UK     100    .015     .15     100
1428          RK    1500    .015    .022            TRAP      50      20
              *

1429          KK  R16NB1
1430          KM        ROUTE FLOW FROM CP16NB TO CP16NB1.
1431          RS       1    FLOW
1432          RC    .035    .035    .035     550    .013
1433          RX       0      16      26      34      44      58      68      86
1434          RY       6       2       2       0       0       2       2       6
              *

1435          KK  C16NB1
1436          KM        ADD HYDROGRAPHS  AT CP16NB1.
1437          HC       2
              *

1438          KK  R16NC1
1439          KM        ROUTE FLOW FROM CP16NB1 TO CP16NC1.
1440          RS       1    FLOW
1441          RC    .035    .035    .035     650    .013
1442          RX       0      16      26      34      54      68      78      96
1443          RY       6       2       2       0       0       2       2       6
              *

1444          KK   SUB7N
1445          KM        RUNOFF FROM SUBBASIN 7N.
1446          BA    .031
1447          LS             77      18
1448          UK     100    .015     .15     100
1449          RK    1900     .01    .018            TRAP      50      20
              *

1450          KK    R8NC
1451          KM        ROUTE FLOW FROM CP7N TO CP8NC.
1452          RS       1    FLOW
1453          RC    .055    .045    .055     700    .025
1454          RX       0       8      13      17      22      26      31      39
1455          RY       4       2       2       0       0       2       2       4
              *
```

```
1456          KK  SUB8NA
1457          KM        RUNOFF FROM SUBBASIN 8NA.
1458          BA   .0046
1459          LS              81       0
1460          UK     100     .03     .15     100
1461          RK     450     .03    .025            TRAP      20       6
              *
1                                          HEC-1 INPUT                                                    PAGE 42

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


1462          KK   SR8NA
1463          KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NA.
1464          RS       1    STOR       0       0
1465          SV       0     .51    .816
1466          SQ       0       1      43
1467          SE    1791    1795    1796
              *

1468          KK    R8NB
1469          KM        ROUTE FLOW FROM CP8NA TO CP8NB.
1470          RS       1    FLOW
1471          RC    .025    .025    .025     300     .03
1472          RX       0      12      24      36      56      68      80      92
1473          RY       6       4       2       0       0       2       4       6
              *

1474          KK  SUB8NB
1475          KM        RUNOFF FROM SUBBASIN 8NB.
1476          BA   .0142
1477          LS              81       0
1478          UK     100     .03     .15     100
1479          RK    1150    .025    .025            TRAP      20       6
              *

1480          KK   CP8NB
1481          KM        ADD HYDROGRAPHS AT CP8NB.
1482          HC       2
              *

1483          KK   SR8NB
1484          KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NB.
1485          RS       1    STOR       0       0
1486          SV       0   .0124   1.754    2.45
1487          SQ       0       2       2      72
1488          SE    1784    1785    1790    1791
              *

1489          KK    R8NC
1490          KM        ROUTE FLOW FROM CP8NB TO CP8NC.
1491          RS       1    FLOW
1492          RC    .025    .025    .025     500     .03
1493          RX       0      12      24      36      56      68      80      92
1494          RY       6       4       2       0       0       2       4       6
              *

1495          KK  SUB8NC
1496          KM        RUNOFF FROM SUBBASIN 8NC.
1497          BA   .0182
1498          LS              81       0
1499          UK     100     .03     .15     100
1500          RK     900     .03    .025            TRAP      20       6
              *
1                                          HEC-1 INPUT                                                    PAGE 43

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


1501          KK   CP8NC
1502          KM        ADD HYDROGRAPHS AT CP8NC.
1503          HC       3
              *

1504          KK   SR8NC
1505          KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB8NC.
1506          RS       1    STOR       0       0
1507          SV       0    .404   2.444    3.13   3.979
1508          SQ       0      10      14     151    1004
1509          SE    1771    1775    1780    1781    1782
              *

1510          KK     R9N
1511          KM        ROUTE FLOW FROM CP8N TO CP9N.
1512          RS       1    FLOW
1513          RC    .025    .025    .025    1150    .025
1514          RX       0       8      13      17      22      26      31      39
1515          RY       4       2       2       0       0       2       2       4
              *

1516          KK   SUB9N
1517          KM        RUNOFF FROM SUBBASIN 9N.
```

```
1518        BA    .055
1519        LS              77      28
1520        UK     100    .008     .15     100
1521        RK    1700     .01    .018            TRAP      50      20
            *

1522        KK    CP9N
1523        KM        ADD HYDROGRAPHS AT CP9N
1524        HC       2
            *

1525        KK    R10B
1526        KM        ROUTE FLOW FROM CP9N TO CP10B.
1527        RS       1    FLOW
1528        RC     .03     .03     .03     400     .02
1529        RX       0       8      16      24      29      37      45      53
1530        RY       6       4       2       0       0       2       4       6
            *

1531        KK  SUB10B
1532        KM        RUNOFF FROM SUBBASIN 10B.
1533        BA    .028
1534        LS              77      42
1535        UK     100    .015     .15     100
1536        RK     350    .008    .018            TRAP      50      20
1537        RK     600    .008    .025            TRAP      10       4
            *
1                                          HEC-1 INPUT                                                    PAGE 44

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

1538        KK   CP10B
1539        KM        ADD HYDROGRAPHS AT CP10B
1540        HC       2
            *

1541        KK   R11NA
1542        KM        ROUTE FLOW FROM CP10B TO CP11NA.
1543        RS       1    FLOW
1544        RC     .03     .03     .03     200     .04
1545        RX       0       8      16      24      29      37      45      53
1546        RY       6       4       2       0       0       2       4       6
            *

1547        KK  UB11NA
1548        KM        RUNOFF FROM SUBBASIN 11NA.
1549        BA   .0076
1550        LS              81       0
1551        UK     100    .025     .15     100
1552        RK     500     .03    .025            TRAP      30       6
            *

1553        KK  CP11NA
1554        KM        ADD HYDROGRAPHS AT CP11NA
1555        HC       2
            *

1556        KK  SR11NA
1557        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB11NA.
1558        RS       1    STOR       0       0
1559        SV       0   .0462   1.425   2.480   3.109   3.856
1560        SQ       0      10      27      27      27     237
1561        SE    1734    1735    1740    1742    1743    1744
            *

1562        KK   R11NB
1563        KM        ROUTE FLOW FROM CP11NA TO CP11NB.
1564        RS       1    FLOW
1565        RC    .025    .025    .025     250     .03
1566        RX       0      12      24      36      56      68      80      92
1567        RY       6       4       2       0       0       2       4       6
            *

1568        KK  UB11NB
1569        KM        RUNOFF FROM SUBBASIN 11NB.
1570        BA   .0078
1571        LS              81       0
1572        UK     100     .04     .15     100
1573        RK     700    .025    .025            TRAP      30       6
            *
1                                          HEC-1 INPUT                                                    PAGE 45

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

1574        KK  CP11NB
1575        KM        ADD HYDROGRAPHS AT CP11NB
1576        HC       2
            *

1577        KK  SR11NB
1578        KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB11NB.
```

```
1579    RS      1    STOR       0       0
1580    SV      0    1.56   2.586
1581    SQ      0      27     111
1582    SE   1732    1737    1738
        *

1583    KK   R11NC
1584    KM        ROUTE FLOW FROM CP11NB TO CP11NC.
1585    RS      1    FLOW
1586    RC   .025    .025    .025     300     .03
1587    RX      0      12      24      36      56      68      80      92
1588    RY      6       4       2       0       0       2       4       6
        *

1589    KK  UB11NC
1590    KM        RUNOFF FROM SUBBASIN 11NC.
1591    BA  .0069
1592    LS             81       0
1593    UK    100     .03     .15     100
1594    RK    650    .028    .025            TRAP      20       5
        *

1595    KK  C11NC1
1596    KM        ADD HYDROGRAPHS AT CP11NC.1
1597    HC      2
        *

1598    KK  SUB10A
1599    KM        RUNOFF FROM SUBBASIN 10A.
1600    BA   .030
1601    LS             77      42
1602    UK    100    .015     .15     100
1603    RK    350    .008    .018            TRAP      50      20
1604    RK    800    .008    .025            TRAP      10       4
        *

1605    KK   R12NB
1606    KM        ROUTE FLOW FROM CP10A TO CP12NB.
1607    RS      1    FLOW
1608    RC   .025    .025    .025     400     .03
1609    RX      0      12      24      36      46      58      70      82
1610    RY      6       4       2       0       0       2       4       6
        *
```



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

1611    KK  UB12NA
1612    KM        RUNOFF FROM SUBBASIN 12NA.
1613    BA  .0153
1614    LS             81       0
1615    UK    150    .025     .15     100
1616    RK    650    .017    .025            TRAP      30       6
        *

1617    KK  SR12NA
1618    KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB1NA.
1619    RS      1    STOR       0       0
1620    SV      0    2.16   3.426   5.071
1621    SQ      0       1       2     142
1622    SE   1741    1745    1746    1747
        *

1623    KK   R12NA
1624    KM        ROUTE FLOW FROM CP12NA TO CP12NB.
1625    RS      1    FLOW
1626    RC   .025    .025    .025     550    .025
1627    RX      0      12      24      36      46      58      70      82
1628    RY      6       4       2       0       0       2       4       6
        *

1629    KK  UB12NB
1630    KM        RUNOFF FROM SUBBASIN 12NB.
1631    BA  .0157
1632    LS             81       0
1633    UK    150    .025     .15     100
1634    RK    650    .017    .025            TRAP      30       6
        *

1635    KK  CP12NB
1636    KM        ADD 3 HYDROGRAPHS AT CP12NB
1637    HC      3
        *

1638    KK  SR12NB
1639    KM        STOAGE ROUTE THROUGH FAIRWAY DETENTION AREA IN SUB12NB.
1640    RS      1    STOR       0       0
1641    SV      0    .922    4.24    7.53
1642    SQ      0       2       2     142
1643    SE   1741    1745    1746    1747
        *
```

```
1644        KK  R11NC2
1645        KM        ROUTE FLOW FROM CP12NA TO CP11NC.
1646        RS       1    FLOW
1647        RC    .025    .025    .025     550     .01
1648        RX       0      12      24      36      46      58      70      82
1649        RY       6       4       2       0       0       2       4       6
            *
1                                          HEC-1 INPUT                                                    PAGE 47

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

1650        KK  CP11NC
1651        KM        ADD HYDROGRAPHS  AT CP11NC
1652        HC       2
            *

1653        KK  SR11NC
1654        KM        ROUTE FLOW THROUGH RETENTION BASIN RT11NC.  18" PIPE OUTFLOW WILL
1655        KM        BLEED FLOWS TO DRAIN THE BASIN AFTER THE STORM HAS PASSED.
1656        RS       1    STOR       0       0
1657        SV       0   1.665   2.303   3.062
1658        SQ       0      27     111     344
1659        SE    1730    1735    1736    1737
            *

1660        KK   R16NC
1661        KM        ROUTE FLOW FROM CP11NC TO CP16NC.
1662        RS       1    FLOW
1663        RC    .035    .035   0.035     950    .025
1664        RX       0       8      13      17      22      26      31      39
1665        RY       4       2       2       0       0       2       2       4
            *

1666        KK  UB16NC
1667        KM        RUNOFF FROM SUBBASIN 16NC.
1668        BA   .0337
1669        LS              77      42
1670        UK     100    .015     .15     100
1671        RK    1600    .015    .022            TRAP      50      20
            *

1672        KK  CP16NC
1673        KM        ADD HYDROGRAPHS  AT CP16NC
1674        HC       2
            *

1675        KK  R16NC1
1676        KM        ROUTE FLOW FROM CP16NC TO CP16NC1.
1677        RS       1    FLOW
1678        RC     .03     .03     .03     550    .013
1679        RX       0      16      26      34      44      58      68      86
1680        RY       6       2       2       0       0       2       2       6
            *

1681        KK  C16NC1
1682        KM        ADD HYDROGRAPHS  AT CP16NC1.
1683        HC       2
            *

1684        KK   R15N1
1685        KM        ROUTE FLOW FROM CP16NC1 TO CP15N1.
1686        RS       1    FLOW
1687        RC    .035    .035    .035     600    .013
1688        RX       0      16      26      34      54      68      78      96
1689        RY       6       2       2       0       0       2       2       6
            *
1                                          HEC-1 INPUT                                                    PAGE 48

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

1690        KK     PC2
1691        KM        RUNOFF FROM SUBBASIN PC2.
1692        BA    .054
1693        LS              77      10
1694        UK     100    .015     .15     100
1695        RK    2700     .01     .03            TRAP      50       4
            *

1696        KK  CP15N1
1697        KM        ADD HYDROGRAPHS  AT CP15N1
1698        HC       2
            *

1699        KK   SRPC2
1700        KM        STORAGE ROUTE THRU DETENTION BASINS IN POWER CORRIDOR THIS IS THE TOTAL
1701        KM        FLOW REACHING THE UPSTREAM SIDE OF THE THOMPSON PEAK PARKWAY BRIDGE
1702        RS       1    STOR       0       0
1703        SV       0    1.02    2.70    4.48     5.8     6.9
1704        SQ       0       0     150     350     550     850
1705        SE    1730    1731    1732    1733    1734    1735
            *
```

```
1706        KK  UB17NA
1707        KM        RUNOFF FROM SUBBASIN SUB17NA.
1708        BA  .00979
1709        LS              81       0
1710        UK     150    .025     .05     100
1711        RK     960   .0292    .025             TRAP       30       50
            *

1712        KK  SR17NA
1713        KM        STORAGE ROUTE THROUGH DETENTION BASIN SR17NA.
1714        RS       1    STOR       0       0
1715        SV       0   .0078    .241    .523    1.00   1.735
1716        SQ       0       1       1       1    17.4     251
1717        SE  1755.2    1756    1758    1759    1760    1761
            *

1718        KK   R17NB
1719        KM        ROUTE FLOW FROM SR17NA TO CP17NB.
1720        RS       1    FLOW
1721        RC    0.03    0.03    0.03     280  0.0286
1722        RX       0      10      20      35      70      85      90     100
1723        RY    1757  1756.8  1756.6    1756    1756    1757    1758    1759
            *

1724        KK  UB17NB
1725        KM        RUNOFF FROM SUBBASIN SUB17NB.
1726        BA   .0111
1727        LS              81       0
1728        UK     150    .025     .05     100
1729        RK    1200   .0217    .025             TRAP       30       50
            *
```



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

1730        KK  CP17NB
1731        KM        ADD HYDROGRAPHS AT SUB17NB.
1732        HC       2
            *

1733        KK  SR17NB
1734        KM        STORAGE ROUTE THROUGH DETENTION BASIN SR17NB.
1735        RS       1    STOR       0       0
1736        SV       0   .0113   .1469    .635   .9795   1.509   2.254   3.243
1737        SQ       0       1       1       1       1       1    38.2     189
1738        SE  1751.5    1752    1753    1755    1756    1757    1758    1759
            *

1739        KK    R17A
1740        KM        ROUTE FLOW FROM SR17NB TO CP17A.
1741        RS       1    FLOW
1742        RC    0.03    0.03    0.03     280   0.033
1743        RX       0      15      18      20      24      27      30      35
1744        RY    1755    1754    1753    1752    1752    1753    1754    1755
            *

1745        KK  SUB17A
1746        KM        RUNOFF FROM SUBBASIN SUB17A.
1747        BA  .00792
1748        LS              77      34
1749        UK      75     .03     .05     100
1750        RK    1500     .02    .025             TRAP        8        4
            *

1751        KK  CP17A1
1752        KM        ADD HYDROGRAPHS AT CP17A1.
1753        HC       2
            *

1754        KK  UB17NC
1755        KM        RUNOFF FROM SUBBASIN SUB17NC.
1756        BA  .00559
1757        LS              77      12
1758        UK      75     .03     .05     100
1759        RK     910   .0187    .025             TRAP        8        4
            *

1760        KK   CP17A
1761        KM        ADD ALL HYDROGRAPHS AT CP17A.
1762        HC       2
            *

1763        KK    R15N
1764        KM        ROUTE FLOW FROM CP17A TO CP15N.
1765        RS       1    FLOW
1766        RC    .035    .035    .035    1950    .025
1767        RX       0       8      13      17      22      26      31      39
1768        RY       4       2       2       0       0       2       2       4
            *
```

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

1769          KK  SUB15N
1770          KM        RUNOFF FROM SUBBASIN 15N.
1771          BA   .0391
1772          LS              77      68
1773          UK     100     .01     .15     100
1774          RK     400    .008    .018            TRAP      50      20
1775          RK    1700    .015    .025            TRAP      10       4
              *

1776          KK   CP15N
1777          KM        ADD HYDROGRAPHS  AT CP15N
1778          HC       2
              *

1779          KK   R15N2
1780          KM        ROUTE FLOW FROM CP15N TO CP15N1.
1781          RS       1    FLOW
1782          RC     .02     .02     .02     700    .013
1783          RX       0       8      13      17      22      26      31      39
1784          RY       6       2       2       0       0       2       2       6
              *

1785          KK  CP15N2
1786          KM        ADD HYDROGRAPHS  AT CP15N1
1787          KM        THIS IS THE INTERIM OUTFLOW DISCHARGE TO NATURAL WASH.
1788          HC       2  1.1611
              *

1789          KK   R15N2
1790          KM        ROUTE 15N2 IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CP15N2 TO THE
1791          KM        POWER LINE CHANNEL CROSSING AT HAYDEN RD.
1792          KM
1793          KM        ROUTE FLOW FROM CP15N2 TO CPC3A.
1794          RS       1    FLOW      -1
1795          RC    .035    .035    .035    2200    .013
1796          RX       0      16      26      34      64      78      88     106
1797          RY       6       2       2       0       0       2       2       6
              *

1798          KK    DPC3
1799          KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1800          KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1801          KM
1802          KM        RETRIEVE DIVERTED FLOW
1803          DR   BPC3T
              *

1804          KK   CPC3A
1805          KM        COMBINE CPC3A IS ADDED BY GVSCE TO ESTIMATE THE TOTAL DISCHARGE AT THE
1806          KM        POWER LINE CHANNEL CROSSING AT HAYDEN RD.
1807          KM
1808          KM        COMBINE ROUTED HYDROGRAPH FROM CP15N2 WITH HYDROGRAPH FROM CPC3
1809          HC       2  1.3446
              *
1                                        HEC-1 INPUT                                          PAGE 51

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

1810          KK   RPC3A
1811          KM        ROUTE PC3A IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CPC3A VIA
1812          KM        THE POWER LINE CHANNEL.
1813          KM
1814          KM        ROUTE FLOW FROM CP15N2 TO CPC3A.
1815          RS       1    FLOW      -1
1816          RC    .035    .035    .035    1100    .013
1817          RX       0      16      26      34      64      78      88     106
1818          RY       6       2       2       0       0       2       2       6
              *

1819          KK    DPC4
1820          KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
1821          KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
1822          KM
1823          KM        RETRIEVE DIVERTED FLOW
1824          DR   BPC4T
              *

1825          KK   CPC4A
1826          KM        COMBINE CPC4A IS ADDED BY GVSCE TO ESTIMATE THE TOTAL DISCHARGE IN THE
1827          KM        POWER LINE CHANNEL
1828          KM
1829          KM        COMBINE ROUTED HYDROGRAPH FROM CPC3A WITH HYDROGRAPH FROM CPC4
1830          HC       2  1.9946
              *

1831          KK   RPC4A
1832          KM        ROUTE PC4A IS ADDED BY GVSCE TO ROUTE THE HYDROGRAPH FROM CPC4A TO THE
1833          KM        POWER LINE CHANNEL CROSSING AT HUALAPAI RD.
1834          KM
```

```
1835        KM        ROUTE FLOW FROM CPC4A TO CPC5.
1836        RS      1    FLOW      -1
1837        RC   .035    .035    .035    1900    .013
1838        RX      0      16      26      34      64      78      88     106
1839        RY      6       2       2       0       0       2       2       6
            *

1840        KK  DPC4AT
1841        KM        DIVERT PC4A IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE OUTER
1842        KM        LOOP DETENTION BASIN VIAL THE POWER LINE CHANNEL.
1843        KM
1844        KM        DIVERT 100% OF FLOW
1845        DT  BPC4AT
1846        DI      0   10000
1847        DQ      0   10000
            *

1848        KK  SUB1-2
1849        KM        RUNOFF FROM SUB 1 AND 2, SOUTH COURSE MODEL
1850        BA   .0558
1851        LS              77      68
1852        UK    200    .010     .15     100
1853        RK   1370    .027    .015            TRAP      50      20
            *
1                                          HEC-1 INPUT                                          PAGE 52
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1854        KK  GCRB18
1855        KM        RUNOFF FROM GOLF COURSE CONTRIBUTING TO RETENTION BASIN AT HOLE NO. 18
1856        KM        AND HOLE NO. 10, SOUTH COURSE
1857        BA    .012
1858        LS              81       0
1859        UK    200    .025     .15     100
1860        RK    300    .016    .025            TRAP      10       4
            *

1861        KK  CPRET1
1862        KM        COMBINE HYDROGRAPHS AT RETENTION BASINS ON HOLE 18 & 10
1863        HC      2
            *

1864        KK   SR18S
1865        KM        STORAGE ROUTE THRU RETENTION BASIN AT HOLE 18, SOUTH COURSE
1866        RS      1    STOR       0       0
1867        SV      0  1.7635  5.7722  12.174  21.337  28.849  30.151      32
1868        SE   1725    1730    1735    1740    1745    1748    1749    1750
1869        SQ      0       0       0       0       0      42     386     900
            *

1870        KK   SUB5S
1871        KM        RUNOFF FROM SUB 5S
1872        BA   .0263
1873        LS              77      31
1874        UK    100    .010     .15     100
1875        RK   1280    .007    .015            TRAP      50      20
            *

1876        KK  GC1216
1877        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES 12, 16, AND 17
1878        BA   .0365
1879        LS              81       0
1880        UK    200    .025     .15     100
1881        RK   2200    .024    .025            TRAP      10       4
            *

1882        KK  GC1415
1883        KM        RUNOFF FROM SOUTH GOLF COURSE HOLES 13, 14, 15 AND RETENTION
1884        BA    .045
1885        LS              81       0
1886        UK    200    .025     .15     100
1887        RK   1300    .022    .025            TRAP      10       4
            *

1888        KK   SUB6S
1889        KM        RUNOFF FROM SUB BASIN 6, SOUTH COURSE
1890        BA    .021
1891        LS              77      42
1892        UK    100    .010     .15     100
1893        RK   2150    .013    .025            TRAP      50      20
            *
1                                          HEC-1 INPUT                                          PAGE 53
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1894        KK   SUB7S
1895        KM        RUNOFF FROM SUB BASIN 7, SOUTH COURSE
1896        BA    .027
1897        LS              77      42
1898        UK    100    .010     .15     100
1899        RK   2080    .023    .025            TRAP      50      20
```

```
                *
1900            KK  CPRET2
1901            KM        COMBINE HYDROGRAPHS AT RETENTION BASIN 2, SOUTH COURSE
1902            HC       5
                *

1903            KK  SRRET2
1904            KM        STORAGE THRU RETENTION BASIN NO. 2, SOUTH COURSE
1905            RS       1    STOR       0       0
1906            SV       0    .617   3.474   9.858  20.063  35.353  52.685  57.749      62
1907            SE    1670    1675    1680    1685    1690    1695    1699    1700    1701
1908            SQ       0       0       0       0       0       0      32     386     594
                *
                *       NO FLOW RELEASED FROM RETENTION BASIN
                *

1909            KK   CLEAR
1910            KM        THIS OPERATION IS ADDED BY GVSCE
1911            KM
1912            KM        CLEAR HYDROGRAPHS FROM THE STACK
1913            HC       2
                *

1914            KK   SUB8S
1915            KM        RUNOFF FROM SUB BASIN 8, SOUTH COURSE
1916            BA   .0256
1917            LS              77      42
1918            UK     100    .010     .15     100
1919            RK    1600    .015    .025            TRAP      50      20
                *

1920            KK   RGC36
1921            KM        ROUTE SUB8S TO CPGC36
1922            RS       1    FLOW
1923            RC    .055    .045    .055     850     .02
1924            RX       0      16      26      30      40      44      54      70
1925            RY       6       2       2       0       0       2       2       6
                *

1926            KK    GC36
1927            KM        RUNOFF FROM SOUTH COURSE HOLES 3, 6, AND NORTH HALF OF HOLE 4.
1928            BA   .0406
1929            LS              81       0
1930            UK     200    .025     .15     100
1931            RK    2350    .015    .035            TRAP      10       4
                *
```



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

1932            KK  C1GC36
1933            KM        COMBINE SUBS 8 AND GC36
1934            HC       2
                *

1935            KK   SUB9S
1936            KM        RUNOFF FROM SUB BASIN 9, SOUTH COURSE
1937            BA   .021
1938            LS              77      53
1939            UK     100    .010     .15     100
1940            RK    1100    .013    .025            TRAP      50      20
                *

1941            KK     R9S
1942            KM        ROUTE SUB9S TO CPGC36
1943            RS       1    FLOW
1944            RC    .035    .035    .035     500     .02
1945            RX       0       8      12      16      18      22      26      30
1946            RY       6       4       3       2       2       3       4       6
                *

1947            KK  CPGC36
1948            KM        COMBINE SUBS 8 AND 9 SOUTH AND GC36
1949            HC       2
                *

1950            KK  SRGC36
1951            KM        STORAGE THRU DETENTION BASIN ON GC36
1952            RS       1    STOR       0       0
1953            SV       0    0.85     1.0
1954            SE    1664    1668    1669
1955            SQ       0      20     205
                *

1956            KK   SUB7A
1957            KM        RUNOFF FROM SUB7A, SOUTH COURSE EAST SIDE ADJACENT TO PIMA ROAD
1958            BA   .0092
1959            LS              77      42
1960            UK     100    .025     .15     100
1961            RK     950    .015    .025            TRAP      50      20
                *
```

```
1962        KK    SR7A
1963        KM        STORAGE THRU DETENTION BASIN ON SUB7A
1964        RS       1    STOR       0       0
1965        SV       0     .68      .8
1966        SE    1700    1703    1704
1967        SQ       0      10     150
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1968        KK    R10S
1969        KM        ROUTE FLOW FROM CP7A TO CP10S
1970        RS       1    FLOW
1971        RC    .035    .035    .035    1400    .015
1972        RX       0       8      12      16      18      22      26      30
1973        RY       6       4       3       2       2       3       4       6
            *

1974        KK  SUB10S
1975        KM        RUNOFF FROM SUB BASIN 10, SOUTH COURSE
1976        BA   .0248
1977        LS              77      53
1978        UK     100    .010     .15     100
1979        RK    1150    .020    .025            TRAP      50      20
            *

1980        KK   CP10S
1981        KM        COMBINE HYDROGRAPHS AT CP10 SOUTH COURSE
1982        HC       2
            *

1983        KK  SUB11S
1984        KM        RUNOFF FROM SUB11, SOUTH COURSE
1985        BA   .0234
1986        LS              77      68
1987        UK     100    .015    .018     100
1988        RK    1050    .015    .025            TRAP     100      20
            *

1989        KK    R11S
1990        KM        ROUTE 11S IS ADDED BY GVSCE TO ROUTE THE RUNOFF FROM SUB11S TO THE
1991        KM        POWER LINE CHANNEL CROSSING AT HUALAPAI DR ALONG HUALAPAI DR.
1992        KM
1993        KM        ROUTE FLOW FROM SUB11S TO CPC5.
1994        RS       1    FLOW      -1
1995        RC    .035    .035    .035     900    .015
1996        RX       0       8      12      16      18      22      26      30
1997        RY       6       4       3       2       2       3       4       6
            *

1998        KK   C10SA
1999        KM        COMBINE 10SA IS ADDED BY GVSCE
2000        KM
2001        KM        COMBINE ROUTED HYDROGRAPH FROM 11S WITH HYDROGRAPH FROM CP10S
2002        HC       2
            *

2003        KK   R10SA
2004        KM        ROUTE 10SA IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE OUTER LOOP
2005        KM        DETENTION BASIN VIA THE POWER LINE CHANNEL.
2006        KM
2007        KM        ROUTE FLOW FROM C10SAS TO CPC5.
2008        RS       1    FLOW      -1
2009        RC    .035    .035    .035     900    .015
```



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

2010        RX       0       8      12      16      18      22      26      30
2011        RY       6       4       3       2       2       3       4       6
            *

2012        KK    GC45
2013        KM        RUNOFF FROM SOUTH COURSE HOLES 4 AND 5
2014        BA   .0127
2015        LS              81       0
2016        UK     200    .015    .025     100
2017        RK     550    .015    .035            TRAP      10       4
            *

2018        KK     PC5
2019        KM        PC5 IS A SUBBASIN ADDED BY GVSCE TO ESTIMATE THE SURFACE RUNOFF FROM
2020        KM        THE POWER LINE CORRIDOR WHICH ENTERS THE POWER LINE CHANNEL
2021        KM
2022        KM        RUNOFF FROM SUBBASIN PC5.
2023        BA  0.0375
2024        LS              77       0
2025        UK     300    .015     .15     100
2026        RK    1900     .01     .03            TRAP      30       4
            *
```

```
2027        KK   DPC4A
2028        KM        THIS OPERATION IS ADDED BY GVSCE IN ORDER TO ROUTE RUNOFF TO THE
2029        KM        OUTER LOOP DETENTION BASIN VIA THE POWER LINE CHANNEL.
2030        KM
2031        KM        RETRIEVE DIVERTED FLOW
2032        DR  BPC4AT
            *

2033        KK    CPC5
2034        KM        COMBINE PC5 IS ADDED BY GVSCE TO ESTIMATE THE TOTAL FLOW IN THE POWER
2035        KM        LINE CHANNEL AT THE HUALAPAI CROSSING
2036        KM
2037        KM        COMBINE ROUTED HYDROGRAPH FROM C10SA AND CPC4A WITH HYDROGRAPHS FROM
2038        KM        CGC45, SRGC36 AND PC5
2039        HC      6  2.1022
            *
            *     ******************  END GREYHAWK WATERSHED  ******************
            *

2040        KK     RC5
2041        KM       ROUTE CPC5 THROUGH SUBBASIN CN5D
2042        RS       1    FLOW      -1
2043        RC    .035    .035    .035    2000    .013
2044        RX       0      16      26      34      64      78      88     106
2045        RY       6       2       2       0       0       2       2       6
            *
1                                          HEC-1 INPUT                                                    PAGE 57
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2046        KK   SCN5D
2047        KM     RUNOFF FROM SUBBASIN CN5D
2048        BA  0.0499
2049        LS              74       0
2050        UK     100   0.025    0.13     100
2051        RK    3100   0.017    0.04             TRAP       0      15
            *

2052        KK    CN5D
2053        KM        COMBINE ROUTED HYDROGRAPH FROM CPC5 W/RUNOFF FROM SCN5D
2054        HC       2
            *

2055        KK     D52
2056        KM     BRING BACK DIVERTED HYDROGRAPH FROM R52
2057        DR    B52T
            *

2058        KK    S53A
2059        KM     RUNOFF FROM SUBBASIN 53A
2060        BA  0.1794
2061        LS              74      11
2062        UK     300   0.022    0.13     100
2063        RK    1475   0.026   0.045  0.0111    TRAP       3       5
2064        RK    1750   0.021    0.04             TRAP      25       5
            *

2065        KK     C53
2066        KM     COMBINE ROUTED HYDROGRAPH FROM FROM C52 WITH RUNOFF FROM SUBBASIN 53A
2067        HC       2  8.0954
            *
            *    R53
            *   ****  TOO SHORT TO ROUTE  ****
            *    NORMAL DEPTH CHANNEL ROUTE FROM C53 TO C53A1 THROUGH PIMA CHANNEL
            *      1    FLOW      -1
            *  0.022   0.022   0.022    1550    0.01
            *   1000    1012    1020    1028    1058    1066    1074    1086
            *    107     104     102     100     100     102     104     107
            *

2068        KK   S53A1
2069        KM     RUNOFF FROM SUBBASIN 53A1
2070        BA  0.3376
2071        LS              74      12              74      30
2072        UK     300   0.022    0.13      70
2073        UK     150   0.027    0.13      30
2074        RK    1250   0.023   0.045  0.0087    TRAP       4       5
2075        RK    5050   0.017    0.04             TRAP      35       5
            *
1                                          HEC-1 INPUT                                                    PAGE 58
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2076        KK   C53A1
2077        KM     COMBINE ROUTED HYDROGRAPH FROM C53 WITH RUNOFF FROM SUBBASSIN 53A1
2078        HC       2  8.4330
            *

2079        KK   SCN6B
2080        KM     RUNOFF FROM SUBBASIN CN6B (WATER CAMPUS)
```

```
2081        KM      TOTAL AREA = 0.0542 sm, 0.0022 sm OF THAT IS NON-CONTRIBUTING
2082        BA  0.0520
2083        LS              74       80                74        0
2084        UK     150    0.01     0.15       70
2085        UK     100   0.025     0.13       30
2086        RK     720    0.02     0.03   0.0084    TRAP        5       10
2087        RK     700    0.01    0.045   0.0050    TRAP        0       10
2088        RK     440   0.009    0.035             TRAP        6        3
            *

2089        KK    C53A
2090        KM     COMBINE HYDROGRAPH FROM C53A WITH RUNOFF FROM SUBBASIN CN6B
2091        HC       2
            *

2092        KK   SCN6D
2093        KM     RUNOFF FROM SUBBASIN CN6D
2094        KM      TOTAL AREA = 0.0398 sm, 0.0029 sm OF THAT IS NON-CONTRIBUTING
2095        BA  0.0369
2096        LS              74        3
2097        UK     100   0.025     0.13      100
2098        RK    1000   0.017     0.04             TRAP        0       15
            *

2099        KK    CP6D
2100        KM     COMBINE HYDROGRAPHS FROM C53A W/RUNOFF FROM SCN6D
2101        HC       2
            *

2102        KK   SCN6C
2103        KM     RUNOFF FROM SUBBASIN CN6C (CAP TREATMENT PLANT AND WATER CAMPUS)
2104        KM      TOTAL AREA = 0.1526 sm, 0.0138 sm OF THAT IS NON-CONTRIBUTING
2105        BA  0.1388
2106        LS              74       80                74        0
2107        UK     150    0.01     0.15       50
2108        UK     100   0.025     0.13       50
2109        RK    1500    0.01     0.03   0.0123    TRAP        5       10
2110        RK     700   0.017     0.04             TRAP        0       15
            *

2111        KK    CP6C
2112        KM        COMBINE HYDROGRAPH FROM CP6D W/RUNOFF FROM SCN6C
2113        HC       2
            *
```

1 HEC-1 INPUT PAGE 59

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

2114        KK    CP5D
2115        KM        COMBINE HYDROGRAPHS FROM CP6C AND CP5D
2116        HC       2
            *

2117        KK   SCN5C
2118        KM     RUNOFF FROM SUBBASIN CN5C
2119        BA  0.1904
2120        LS              74        0
2121        UK     150   0.020     0.13      100
2122        RK    3700  0.0176     0.04             TRAP        0       15
            *

2123        KK   SCN6E
2124        KM     RUNOFF FROM SUBBASIN CN6E
2125        BA  0.0427
2126        LS              74        5
2127        UK      50    0.01     0.13      100
2128        RK    3200   0.002    0.025             TRAP        0       50
            *

2129        KK    PIMA
2130        KM     COMBINE HYDROGRAPH FROM CP5D WITH W/RUNOFF FROM SCN5C AND SCN6E
2131        HC       3
            *

2132        KK   SCNA1      SUB
2133        KM         RUNOFF FROM SUB CNA1
2134        BA  0.1099
2135        LS              77
2136        UK     300   0.015     0.13      100
2137        RK    1900   0.015     0.04             TRAP        0       20
            *
2138        KM   ************************************************************
2139        KM   ************ BEGIN GILBERTSON GRAYHAWK VILLAGE *****************
2140        KM   ************************************************************
            *
            *

2141        KK      1G
2142        KM
2143        KM        NOTE: ALL HEC-1 DATA FOR SUB-BASINS 1G THROUGH 1L ARE TAKEN FROM
2144        KM              GILBERTSON ASSOCIATES MODEL UDPLAN.DAT, AS PUBLISHED IN THE
2145        KM              AUGUST 1995 REPORT TITLED "UNIT DRAINAGE PLAN, GRAYHAWK VILLAGE 1"
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2146        KM              THE GILBERTSON MODEL USED SCS UNIT HYDROGRAPH METHODOLOGY.
2147        KM
2148        KM              THE CITY OF SCOTTSDALE HAS REQUIRED GILBERTSON ASSOCIATES TO RE-DO
2149        KM              THIS MODEL WITH KINEMATIC WAVE METHOGOLOGY IN ORDER TO BE
2150        KM              CONSISTENT WITH ALL PREVIOUS MODELING EFFORTS FOR THIS AREA.
2151        KM              AS OF 10/18/95, GILBERTSON ASSOCIATES HAS NOT COMPLIED WITH THIS
2152        KM              REQUEST.  ACCORDINGLY, THE UNIT HYDROGRAPH DATA WILL BE USED FOR
2153        KM              THE REFERENCED SUB-BASINS UNTIL THIS REVISED MODELING DATA IS
2154        KM              AVAILABLE.
2155        KM        EXCESS RUNOFF FROM SUBAREA 1G
1                                        HEC-1 INPUT                                    PAGE 60

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

2156        BA    .059
2157        LS              74       53
2158        UD     .06
            *

2159        KK   DET1G
2160        KM        DETENTION FOR PARCEL 1G
2161        RS       1    STOR       0
2162        SV       0     4.8
2163        SQ       0      26
2164        SE       0       3
2165        ST       3      15     2.8     1.5
            *

2166        KK   R1GI1
2167        KM        ROUTE DET1G TO THOMPSON PEAK PARKWAY
2168        KM        TRAPEZOIDAL CHANNEL PER 76TH STREET PLANS
2169        KM                        SIDE SLOPE = 3:1 (H:V)
2170        KM                        MAX DEPTH  = 1.6 FT.
2171        KM                        BOT.WIDTH  = 8.0 FT.
2172        RS       1    FLOW      -1
2173        RC   0.025   0.025   0.025    1400   0.017
2174        RX       0     0.5     1.0     5.8    13.8    18.6      19    19.5
2175        RY     1.8     1.7     1.6       0       0     1.6     1.7     1.8
            *

2176        KK      1I
2177        KM        EXCESS RUNOFF FROM SUBAREA 1I
2178        BA    .062
2179        LS              74       52
2180        UD     .07
            *

2181        KK   DET1I
2182        KM        DETENTION FOR SUBAREA 1I
2183        RS       1    STOR       0
2184        SV       0     4.0
2185        SQ       0      39
2186        SE       0       3
2187        ST       3      15     2.8     1.5
            *

2188        KK   CP1I1
2189        KM        COMBINE HYDROGRAPHS FROM R1G1I AND DET1I
2190        HC       2
            *

2191        KK      1J
2192        KM        EXCESS RUNOFF FROM SUBAREA 1J
2193        BA   .0175
2194        LS              74       64
2195        UD     .06
            *
1                                        HEC-1 INPUT                                    PAGE 61

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

2196        KK   DET1J
2197        KM        DETENTION FOR SUBAREA 1J
2198        RS       1    STOR       0
2199        SV       0     2.1
2200        SQ       0      11
2201        SE       0       3
2202        ST       3      15     2.8     1.5
            *

2203        KK   R1JI2
2204        KM        ROUTE DET1J TO 76TH STREET (WEST)
2205        KM        TRIANGULAR CHANNEL PER PLANS (1661-E-94)
2206        KM                        SIDE SLOPE = 4:1 (H:V)
2207        KM                        MAX DEPTH  = 3.0 FT.
2208        RS       1    FLOW      -1
2209        RC    .025    .025    .025    1400    .005
2210        RX       0     0.5     1.0    12.9      13      25    25.5      26
2211        RY     3.2     3.1     3.0       0       0     3.0     3.1     3.2
            *

2212        KK   CP1I2
```

```
2213        KM        COMBINE HYDROGRAPHS FROM DET1J AND 1I
2214        HC       2
            *

2215        KK   R1IL1
2216        KM        ROUTE 1I TO 1L
2217        KM        TRAPEZOIDAL CHANNEL PER 76TH STREET PLANS
2218        KM                        SIDE SLOPE = 3:1 (H:V)
2219        KM                        MAX DEPTH  = 3.5 FT.
2220        KM                        BOT.WIDTH  = 8.0 FT.
2221        RS       1    FLOW      -1
2222        RC     .03     .03     .03     730     .015
2223        RX       0     0.5     1.0    11.5    19.5      30    30.5      31
2224        RY     3.7     3.6     3.5       0       0     3.5     3.6     3.7
            *

2225        KK      1L
2226        KM        EXCESS RUNOFF FROM SUBAREA 1L
2227        BA   .0484
2228        LS              74       64
2229        UD    .217
            *

2230        KK   CP1L1
2231        KM        COMBINE HYDROGRAPHS FROM 1L AND R1IL1
2232        HC       2
            *
2233        KM   ************************************************************
2234        KM   ************ END GILBERTSON GRAYHAWK VILLAGE ******************
2235        KM   ************************************************************
            *
```



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

2236        KK     RA2
2237        KM        ROUTE FLOW THROUGH SUBBASIN CNA2 FROM GRAYHAWK
2238        KM        TRAPEZOIDAL CHANNEL B=20 Z=10
2239        RS       2    FLOW      -1
2240        RC    .050   0.025    .050    4200  0.0167
2241        RX       0      10      20      60      80     120     130     140
2242        RY       6       5       4       0       0       4       5       6
            *
            *

2243        KK   SCNA2     SUB
2244        KM         RUNOFF FROM SUB CNA2
2245        BA  0.1859
2246        LS              77
2247        UK     250  0.0167    0.13     100
2248        RK    3900  0.0167    0.04            TRAP       0      15
            *

2249        KK     CA2
2250        KM        COMBINE ROUTED HYDROGRAPH FROM CP1L1 W/RUNOFF FROM CNA2
2251        HC       2
            *

2252        KK    CPA2
2253        KM        COMBINE RUNOFF FROM CNA1 WITH HYDROGRAPH FROM CA2
2254        HC       2
            *

2255        KK   SCNA3     SUB
2256        KM         RUNOFF FROM SUB CNA3
2257        BA  0.2027
2258        LS              77
2259        UK     300  0.0179    0.13     100
2260        RK    5300  0.0179    0.04            TRAP       0      20
            *

2261        KK    CPA3
2262        KM        COMBINE HYDROGRAPH CPA2 W/RUNOFF FROM SCNA3
2263        HC       2
            *

2264        KK   SCNA4     SUB
2265        KM         RUNOFF FROM SUB CNA4
2266        BA  0.1459
2267        LS              77
2268        UK     200   0.015    0.13     100
2269        RK    4500  0.0181    0.04            TRAP       0      15
            *
```



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

2270        KK    CPA4
2271        KM        COMBINE HYDROGRAPH CPA3 W/RUNOFF FROM SCNA4
2272        HC       2
            *
```

```
2273          KK   SCNA5     SUB
2274          KM          RUNOFF FROM SUB CNA5
2275          BA  0.0678
2276          LS              77        5
2277          UK      50    0.01     0.13      100
2278          RK    5000   0.002    0.025             TRAP        0       50
              *

2279          KK  MILLER
2280          KM        COMBINE HYDROGRAPH FROM CPA4 W/RUNOFF FROM SCNA5
2281          HC        2
              *

2282          KK  OLDB-I
2283          KM
2284          HC        2
              *

2285          KK  OLDB-O
2286          KM        OUTER LOOP BASIN LOCATED NORTH OF THE LOOP 101 FREEWAY
2287          KM        (2) 108" CONCRETE OUTLET CULVERTS
2288          RS        1    STOR       -1        0
2289          SV        0    8.44    20.76    38.23    77.47   239.71   263.87
2290          SQ        0     400      800     1200     1600     2000     2068
2291          SE   1590.0  1593.7   1595.8   1599.3   1603.8   1608.0   1609.0
              *
2292          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   20         S30N
                V
                V
   29         R30N
                .
                .
   35           .       S31.1
                .          .
                .          .
   43       C31.1............
                .
                .
   46           .       S34.2
                .          .
                .          .
   55       C34.2............
                .
                .
   58           .        S35N
                .          .
                .          .
   70           .          .-------->   D35NL
   66           .       D35NR
                .          V
                .          V
   73           .       R35NR
                .          .
                .          .
   80           .          .       S36.2
                .          .          .
                .          .          .
   88           .       C36.2............
                .          .
                .          .
   95           .          .-------->  D36.2L
   91           .      D36.2R
                .          V
                .          V
   98           .      R36.2R
                .          .
                .          .
  105           .          .       S34.1
                .          .          .
                .          .          .
  114           .       C34.1............
                .          .
                .          .
  117       HVDB-I............
                V
                V
  120       HVDB-O
                V
                V
  134        R34.1
                .
                .
  140           .       S36.1
                .          .
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                .          .
147       C36.1............
              V
              V
150       R36.1
              .
              .
158           .          .<-------   D35NL
156           .       B35NL
              .          V
              .          V
159           .       R35NL
              .          .
              .          .
168           .          .          .<-------  D36.2L
166           .          .     B36.2L
              .          .          V
              .          .          V
169           .          .     R36.2L
              .          .          .
              .          .          .
176           .          .          .     S36R1A
              .          .          .          .
              .          .          .          .
184       C36R1A..................................
              .
              .
189           .      S36R1B
              .          .
              .          .
197       C36R1B...........
              .
              .
200           .      S36R2A
              .          .
              .          .
207       C36R2A...........
              V
              V
210       R36R2A
              .
              .
222           .      S36R2B
              .          .
              .          .
229       C36R2B...........
              .
              .
232           .       S51.1
              .          .
              .          .
240       DVDB-I...........
              V
              V
243       DVDB-O
              .
              .
259           .-------> B51.1T
257       D51.1T
              .
              .
262           .        52D4
              .          V
              .          V
268           .       52D4R
              .          .
              .          .
271           .          .       52D4B
              .          .          .
              .          .          .
277           .      52D5C1............
              .          .
              .          .
280           .          .       52D5A
              .          .          V
              .          .          V
286           .          .      52D5AR
              .          .          .
              .          .          .
289           .      52D5C2............
              .          V
              .          V
292           .       52D5R
              .          .
              .          .
295           .          .        52C3
              .          .          V
              .          .          V
301           .          .       52C3R
              .          .          .
              .          .          .
304           .          .          .      52C3B
              .          .          .          .
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310          .          .          .          .
             .          .      2C3BC1.........
             .          .          .
             .          .          .
313          .     2C3BC2.........
             .         V
             .         V
316          .     52C3BR
             .          .
             .          .
319          .          .        51C
             .          .          .
             .          .          .
327          .          .          .-------> 51C1DV
325          .          .      51C1D
             .          .          V
             .          .          V
330          .          .      51C1R
             .          .          .
             .          .          .
333          .          .          .        52C1
             .          .          .          .
             .          .          .          .
339          .          .      52C1C.........
             .          .          V
             .          .          V
342          .          .      52C1R
             .          .          .
             .          .          .
345          .          .          .       52C2A
             .          .          .          .
             .          .          .          .
351          .          .      52C2AC........
             .          .          .
             .          .          .
354          .          .          .       52C2B
             .          .          .          .
             .          .          .          .
360          .          .      52C2BC........
             .          .          V
             .          .          V
363          .          .      52C2BR
             .          .          .
             .          .          .
366          .          .          .       52C2C
             .          .          .          .
             .          .          .          .
372          .          .      52C2CC........
             .          .          V
             .          .          V
375          .          .      52C2R
             .          .          .
             .          .          .
378          .          .          .        52C4
             .          .          .          .
             .          .          .          .
384          .          .      52C4C1........
             .          .          .
             .          .          .
387          .     52C4C2.........
             .         V
             .         V
390          .      52C4R
             .          .
             .          .
393          .          .      52C13
             .          .          .
             .          .          .
401          .          .          .-------> STORM
399          .          .      2C13DV
             .          .          .
             .          .          .
404          .          .          .       52C15
             .          .          .          .
             .          .          .          .
410          .          .      2C15C1........
             .          .          .
             .          .          .
413          .     2C15C2.........
             .         V
             .         V
416          .     52C15R
             .          .
             .          .
419          .          .      52C14A
             .          .          .
             .          .          .
425          .     2C14AC........
             .         V
             .         V
428          .     2C14AR
             .          .
             .          .
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433          .          .          .<-------  51C1DV
431          .          .     51C1DV
             .          .          .
             .          .          .
436          .          .          .------->  51C2DV
434          .          .      51C2D
             .          .          V
             .          .          V
439          .          .      51C2R
             .          .          .
             .          .          .
442          .          .          .       52C5
             .          .          .          .
             .          .          .          .
448          .          .      52C5C............
             .          .          V
             .          .          V
451          .          .      52C5R
             .          .          .
             .          .          .
454          .          .          .       52C6
             .          .          .          .
             .          .          .          .
460          .          .      52C6C............
             .          .          V
             .          .          V
463          .          .      52C6R
             .          .          .
             .          .          .
468          .          .          .           .<-------  51C2DV
466          .          .          .     51C2DV
             .          .          .          V
             .          .          .          V
469          .          .          .      51C3R
             .          .          .          .
             .          .          .          .
472          .          .          .          .         51B
             .          .          .          .          .
             .          .          .          .          .
480          .          .          .          .          .------->  51B1DV
478          .          .          .          .      51B1D
             .          .          .          .          V
             .          .          .          .          V
483          .          .          .          .      51B1R
             .          .          .          .          .
             .          .          .          .          .
486          .          .          .          .          .       52C7
             .          .          .          .          .          .
             .          .          .          .          .          .
492          .          .          .      52C7C........................
             .          .          .          V
             .          .          .          V
495          .          .          .      52C7R
             .          .          .          .
             .          .          .          .
500          .          .          .          .           .<-------  51B1DV
498          .          .          .          .     51B1DV
             .          .          .          .          .
             .          .          .          .          .
503          .          .          .          .          .------->  51B2DV
501          .          .          .          .      51B2D
             .          .          .          .          V
             .          .          .          .          V
506          .          .          .          .      51B2R
             .          .          .          .          .
             .          .          .          .          .
509          .          .          .          .          .       52C8
             .          .          .          .          .          .
             .          .          .          .          .          .
515          .          .          .          .      52C8C............
             .          .          .          .          V
             .          .          .          .          V
518          .          .          .          .      52C8R
             .          .          .          .          .
             .          .          .          .          .
521          .          .          .     52C9C1............
             .          .          .          V
             .          .          .          V
524          .          .          .     52C9R1
             .          .          .          .
             .          .          .          .
527          .          .          .          .       52C9
             .          .          .          .          .
             .          .          .          .          .
533          .          .          .     52C9C2............
             .          .          .          V
             .          .          .          V
536          .          .          .     52C9R2
             .          .          .          .
             .          .          .          .
539          .          .      2C10C1............
             .          .          V
             .          .          V
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542          .          .      2C10R1
             .          .          .
             .          .          .
545          .          .          .       52C10
             .          .          .           .
             .          .          .           .
551          .          .      2C10C2...........
             .          .          .
             .          .          .
554          .          .          .       52C11
             .          .          .           V
             .          .          .           V
560          .          .          .      2C11R1
             .          .          .           .
             .          .          .           .
565          .          .          .           .          .<-------   STORM
563          .          .          .           .     52C13D
             .          .          .           .          .
             .          .          .           .          .
566          .          .          .      52C11C...........
             .          .          .           V
             .          .          .           V
569          .          .          .      2C11CR
             .          .          .           .
             .          .          .           .
572          .          .      2C11C2...........
             .          .          V
             .          .          V
575          .          .      2C11R2
             .          .          .
             .          .          .
578          .          .          .       52C12
             .          .          .           .
             .          .          .           .
584          .          .      52C12C...........
             .          .          V
             .          .          V
587          .          .      52C12R
             .          .          .
             .          .          .
590          .          .          .      52C14B
             .          .          .           .
             .          .          .           .
596          .          .      C14BC1...........
             .          .          .
             .          .          .
599          .      C14BC2...........
             .          V
             .          V
602          .      52C14R
             .          .
             .          .
607          .          .          .<-------  51B2DV
605          .          .      51B2DV
             .          .          .
             .          .          .
610          .          .          .-------> 51B3DV
608          .          .       51B3D
             .          .          V
             .          .          V
613          .          .       51B3R
             .          .          .
             .          .          .
616          .          .          .        52B1
             .          .          .           .
             .          .          .           .
622          .          .       52B1C...........
             .          .          V
             .          .          V
625          .          .       52B1R
             .          .          .
             .          .          .
630          .          .          .           .<-------  51B3DV
628          .          .          .      51B3DV
             .          .          .           .
             .          .          .           .
633          .          .          .           .-------> 51B4DV
631          .          .          .       51B4D
             .          .          .           V
             .          .          .           V
636          .          .          .      51B4R1
             .          .          .           .
             .          .          .           .
639          .          .      52B2C1...........
             .          .          V
             .          .          V
642          .          .      52B2R1
             .          .          .
             .          .          .
645          .          .          .        52B2
             .          .          .           .
             .          .          .           .
651          .          .      52B2C2...........
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                 .          .          V
                 .          .          V
654              .          .     52B2R2
                 .          .          V
                 .          .          V
657              .          .     52B3R1
                 .          .          .
                 .          .          .
660              .          .          .        52B3
                 .          .          .          .
                 .          .          .          .
666              .          .     52B3C2............
                 .          .          V
                 .          .          V
669              .          .     52B3R2
                 .          .          .
                 .          .          .
672              .          .          .        52B4
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678              .          .      52B4C............
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681              .          .      52B4R
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684              .          .          .        52B5
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690              .          .     52B5C1............
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693              .     52B5C2............
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696              .      52B5R
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701              .          .          .<-------  51B4DV
699              .          .     51B4DV
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704              .          .          .------->  51B5DV
702              .          .      51B5D
                 .          .          V
                 .          .          V
707              .          .      51B5R
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712              .          .          .          .<-------  51B5DV
710              .          .          .     51B5DV
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715              .          .          .          .------->  51B6DV
713              .          .          .      51B6D
                 .          .          .          V
                 .          .          .          V
718              .          .          .      51B6R
                 .          .          .          .
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723              .          .          .          .          .<-------  51B6DV
721              .          .          .          .     51B6DV
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                 .          .          .          .          .
726              .          .          .          .          .------->  51B7DV
724              .          .          .          .      51B7D
                 .          .          .          .          V
                 .          .          .          .          V
729              .          .          .          .     51B7R1
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732              .          .      51B7C.......................
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                 .          .          V
735              .          .     51B7R2
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738              .          .          .        52B6
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744              .          .      52B6C............
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747              .          .      52B6R
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750              .          .          .        52B7
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756              .          .     52B7C1............
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759              .     52B7C2............
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762                 52A2
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768          52A2C2............
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773                   .<-------  51B7DV
771                 51B7DV
                      V
                      V
774                 51B8R
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777                   .        52A1
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783                 52A1C............
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788                   .           .<-------  B51.1T
786                   .       D51.1
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789                 C52A............
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793            C52............
                 V
                 V
797            R52
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805                   .------->    B52T
803           D52T
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808       CLEAR............
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811            37A
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828                   .------->    37AW
817           37AE
                 V
                 V
831          37AE1
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838                 SUB5N
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845          CP5N............
                 V
                 V
848          RET5N
                 V
                 V
855          R6N.1
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863                 SUB6B
                      V
                      V
869                 SR6B
                      .
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875          CP6.1............
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878                 SUB1N
                      V
                      V
884                 R2NA
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890                   .      SUB2NA
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896                 CP2NA............
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899                 SR2NA
                      V
                      V
905                 R2NB
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911                   .      SUB2NB
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              .          .           V
 920          .          .       SR2NB
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 926          .          .       RCP4N
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 932          .          .           .       SUB6N
              .          .           .           V
              .          .           .           V
 938          .          .           .       RET6N
              .          .           .           V
              .          .           .           V
 944          .          .           .      RCP4N1
              .          .           .           .
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 950          .          .      CP4N.1............
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 953          .          .           .       SUB3N
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              .          .           .           V
 959          .          .           .       RET3N
              .          .           .           V
              .          .           .           V
 966          .          .           .         R4N
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 972          .          .      CP4N.2............
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 975          .          .           .       SUB4N
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 981          .          .        CP4N............
              .          .           V
              .          .           V
 984          .          .         R6N
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 990          .          .           .       SUB6A
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 996          .          .       CP6.2............
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 999          .       CP6N............
              .          V
              .          V
1002          .       RCP6N
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1008          .          .       SUB3C
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1014          .       CP3C............
              .          V
              .          V
1017          .        R3C
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1025          .          .      GC1018
              .          .           .
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1031          .          .           .       GC1-9
              .          .           .           .
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1037          .          .           .           .       SUB3S
              .          .           .           .           .
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1043          .       CP3S.......................................
              .          V
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1046          .       RT3S
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1052          .          .       SUB4S
              .          .           V
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1058          .          .        RT4S
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1064          .          .           .       GC2-8
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1070          .     1PGC28........................
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1073          .          .      SUB3D3
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1079          .     CPGC28............
              .         V
              .         V
1082          .     SRGC28
              .         V
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1088          .      RT7S
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1094          .         .        GC7
              .         .         .
              .         .         .
1100          .      CP7S............
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              .         .
1108          .         .-------->   B7ST
1103          .      D7ST
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1111      CLEAR............
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1114          .     SUB3D1
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1119          .      RD1B1
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              .         .
1125          .         .      SUB3B1
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1130          .      CP3B1............
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              .         V
1133          .      RB13F
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1139          .         .       SUB3F
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1145          .      CP3F............
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1148          .         .      SUB3B2
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1153          .         .       RB2E1
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1159          .         .       RB2E2
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1165          .         .         .      SUB3E1
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1170          .         .      1CPE31............
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1173          .         .         .      SUB3D2
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1178          .         .         .       RD2E2
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1184          .         .         .         .      SUB3E2
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1189          .         .         .       CP3E2............
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1192          .         .         .         .         PC3
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              .         .         .         .         .
1201          .      CPC3.................................
              .         .
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1213          .         .-------->   BPC3T
1208          .     DPC3T
              .         .
              .         .
1216          .         .      SUB3E3
              .         .         .
              .         .         .
1221          .         .         .        PC4
              .         .         .         .
              .         .         .         .
1235          .         .         .         .         .<--------    B7ST
1230          .         .         .         .       D7S
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1236          .         .       CPC4........................
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1247          .          .          .-------->   BPC4T
1242          .          .      DPC4T
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1250      CLEAR.......................
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1256          .          .<-------    37AW
1253          .       37AW
              .          V
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1257          .       R14R
              .          V
              .          V
1264          .     RET141
              .          V
              .          V
1271          .      R14.1
              .          .
              .          .
1278          .          .     SUB13N
              .          .          V
              .          .          V
1284          .          .      R14.1
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1290          .          .          .      SUB14N
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1296          .       CP14........................
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              .          V
1299          .      RET14
              .          V
              .          V
1306          .      R18.1
              .          .
              .          .
1312          .          .     SUB20N
              .          .          V
              .          .          V
1318          .          .        R19
              .          .          .
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1324          .          .          .      SUB19N
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1330          .          .      CP19N............
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1333          .          .      R18NC
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1339          .          .          .      UB18NC
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1345          .     CP18NC......................
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1348          .       RPC1
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1354          .          .     UB18NA
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1366          .          .          .      UB18NB
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1384          .          .      1CPC1........................
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1387          .          .      SRPC1
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1393          .       CPC1............
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1396          .     R16NA1
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1408          .          .     R16NA1
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1414            .     C16NA1............
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1423            .         .     UB16NB
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1429            .         .     R16NB1
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1435            .     C16NB1............
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1438            .     R16NC1
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1444            .         .      SUB7N
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1456            .         .         .      SUB8NA
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1504            .         .      SR8NC
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1510            .         .       R9N
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1516            .         .         .       SUB9N
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1522            .         .       CP9N............
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1538            .         .      CP10B............
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1568            .         .         .      UB11NB
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1574            .         .     CP11NB............
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1577             .         .     SR11NB
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1583             .         .      R11NC
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1605             .         .         .      R12NB
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1611             .         .         .         .     UB12NA
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1617             .         .         .         .     SR12NA
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1623             .         .         .         .      R12NA
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1653             .         .     SR11NC
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1684             .      R15N1
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1690             .         .       PC2
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1696             .     CP15N1............
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1699             .      SRPC2
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1706             .         .     UB17NA
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1712             .         .     SR17NA
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1718             .         .      R17NB
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1724             .         .         .     UB17NB
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1733             .         .     SR17NB
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1739             .         .      R17A
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1779            .         .      R15N2
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1785            .     CP15N2...........
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1789            .      R15N2
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1803            .         .         .<-------   BPC3T
1798            .         .       DPC3
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1804            .      CPC3A...........
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1810            .      RPC3A
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1824            .         .         .<-------   BPC4T
1819            .         .       DPC4
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1825            .      CPC4A...........
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1831            .      RPC4A
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1845            .         .-------- BPC4AT
1840            .     DPC4AT
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1848            .         .     SUB1-2
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1854            .         .         .      GCRB18
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1870            .         .         .       SUB5S
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1876            .         .         .           .      GC1216
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1882            .         .         .           .           .      GC1415
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1888            .         .         .           .           .           .      SUB6S
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1894            .         .         .           .           .           .           .      SUB7S
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1900            .         .         .      CPRET2.......................................................
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1903            .         .         .      SRRET2
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1909            .         .      CLEAR...........
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1914            .         .         .       SUB8S
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                                  V
1920                           RGC36
                                  .
1926                              .        GC36
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1932                           C1GC36.........
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1935                              .      SUB9S
                                  .          V
1941                              .          V
                                  .        R9S
                                  .          .
1947                           CPGC36.........
                                  V
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1950                           SRGC36
                                  .
1956                              .      SUB7A
                                  .          V
1962                              .          V
                                  .       SR7A
                                  .          V
1968                              .          V
                                  .       R10S
                                  .          .
1974                              .          .      SUB10S
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1980                              .      CP10S.........
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1983                              .          .      SUB11S
                                  .          .          V
1989                              .          .          V
                                  .          .       R11S
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1998                              .      C10SA.........
                                  .          V
2003                              .          V
                                  .      R10SA
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2012                              .          .       GC45
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2018                              .          .        .        PC5
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2032                              .          .        .         .        .<-------  BPC4AT
2027                              .          .        .         .     DPC4A
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2033                           CPC5.......................................
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                                  V
2040                            RC5
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2046                              .      SCN5D
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2052                           CN5D.........
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2057                              ..<-------    B52T
2055                              .      D52
                                  .        .
2058                              .      S53A
                                  .        .
2065                              .      C53.........
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2068                              .      S53A1
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2076                              .    C53A1.........
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2079                              .      SCN6B
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2089                              .    C53A.........
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2092                                  SCN6D
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2099                             CP6D...........
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2102                                  SCN6C
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2111                             CP6C...........
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2114                       CP5D...........
                                        .
2117                             SCN5C
                                        .
2123                                  SCN6E
                                        .
2129                       PIMA......................
                                        .
2132                             SCNA1
                                        .
2141                                     1G
                                         V
                                         V
2159                                  DET1G
                                         V
                                         V
2166                                  R1GI1
                                        .
                                        .
2176                                        .        1I
                                            .        V
                                            .        V
2181                                        .     DET1I
                                            .        .
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2188                                  CP1I1...........
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2191                                        .        1J
                                            .        V
                                            .        V
2196                                        .     DET1J
                                            .        V
                                            .        V
2203                                        .     R1JI2
                                            .        .
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2212                                  CP1I2...........
                                         V
                                         V
2215                                  R1IL1
                                        .
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2225                                        .        1L
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2230                                  CP1L1...........
                                         V
                                         V
2236                                   RA2
                                        .
                                        .
2243                                        .     SCNA2
                                            .        .
                                            .        .
2249                                   CA2............
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2252                             CPA2...........
                                        .
                                        .
2255                                  SCNA3
                                        .
                                        .
2261                             CPA3...........
                                        .
                                        .
2264                                  SCNA4
                                        .
                                        .
2270                             CPA4...........
                                        .
                                        .
2273                                  SCNA5
                                        .
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2279          .          .          .          .          .
              .          .          .      MILLER.........
              .          .          .          .
2282          .          .      OLDB-I.........
              .          .          V
              .          .          V
2285          .          .      OLDB-O

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              MAY   1991           *
*           VERSION 4.0.1E          *
*     Lahey F77L-EM/32 version 5.01 *
*       Dodson & Associates, Inc.   *
*  RUN DATE  03/25/98  TIME  13:48:55*
*************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*          (916) 551-1748           *
*                                   *
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PIMA ROAD THREE BASINS                          File: ULTMT-24.IH1
by  Stantech for the City of Scottsdale       Original: 08-07-97     mcg
    Project:  28900051


100-YEAR, 24-HOUR STORM
    10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
    10% LEVEL DESIGN FOR DEER VALLEY DETENTION BASIN ALTERNATIVE 3
    100% OF FLOWSPLITS ARE ROUTED TO DEER VALLEY DETENTION BASIN
    10% LEVEL DESIGN FOR OUTER LOOP DETENTION BASIN

    ULTIMATE CONDITION --- POWER LINE CHANNEL:
      GRAYHAWK RUNOFF RELEASED TO NATURAL WASHES ARE COLLECTED IN THE
      "POWER LINE CHANNEL" AND ROUTED TO THE OUTER LOOP DETENTION BASIN.
      THE ULTIMATE LOCATION AND GEOMETRY OF THE POWER LINE CHANNEL WILL
      BE DETERMINED BY OTHERS.

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      7    0  ENDING DATE
                     NDTIME        2235  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL    0.08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

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

       *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1


       *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


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WARNING --- ROUTED OUTFLOW (     912.) IS GREATER THAN MAXIMUM OUTFLOW (     850.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (     872.) IS GREATER THAN MAXIMUM OUTFLOW (     850.) IN STORAGE-OUTFLOW TABLE

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WARNING --- ROUTED OUTFLOW (     255.) IS GREATER THAN MAXIMUM OUTFLOW (     205.) IN STORAGE-OUTFLOW TABLE
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	S30N	1260.	12.33	150.	44.	15.	0.65		
+	ROUTED TO	R30N	1234.	12.33	150.	44.	15.	0.65		
+									103.91	12.33
+	HYDROGRAPH AT	S31.1	437.	12.33	52.	15.	5.	0.27		
+	2 COMBINED AT	C31.1	1672.	12.33	202.	59.	20.	0.92		
+	HYDROGRAPH AT	S34.2	747.	12.33	88.	26.	9.	0.44		
+	2 COMBINED AT	C34.2	2419.	12.33	290.	85.	29.	1.36		
+	HYDROGRAPH AT	S35N	1339.	12.25	127.	37.	12.	0.55		
+	DIVERSION TO	D35NL	1339.	0.08	127.	37.	12.	0.55		
+	HYDROGRAPH AT	D35NR	0.	0.08	0.	0.	0.	0.55		
+	ROUTED TO	R35NR	0.	0.08	0.	0.	0.	0.55		
+									100.00	0.00

+	HYDROGRAPH AT	S36.2	430.	12.25	41.	12.	4.	0.21	
+	2 COMBINED AT	C36.2	430.	12.25	41.	12.	4.	0.76	
+	DIVERSION TO	D36.2L	430.	0.08	41.	12.	4.	0.76	
+	HYDROGRAPH AT	D36.2R	0.	0.08	0.	0.	0.	0.76	
+	ROUTED TO	R36.2R	0.	0.08	0.	0.	0.	0.76	
+									100.00 0.00
+	HYDROGRAPH AT	S34.1	2096.	12.25	231.	68.	23.	1.16	
+	2 COMBINED AT	C34.1	2096.	12.25	231.	68.	23.	1.92	
+	2 COMBINED AT	HVDB-I	4378.	12.33	521.	153.	51.	3.28	
+	ROUTED TO	HVDB-O	140.	15.50	139.	126.	51.	3.28	
+									2088.38 15.50
+	ROUTED TO	R34.1	140.	15.58	139.	126.	51.	3.28	
+									101.47 15.58
+	HYDROGRAPH AT	S36.1	181.	12.33	24.	7.	2.	0.14	
+	2 COMBINED AT	C36.1	289.	12.42	159.	132.	54.	3.42	
+	ROUTED TO	R36.1	288.	12.42	159.	132.	54.	3.42	
+									102.07 12.42
+	HYDROGRAPH AT	B35NL	1339.	12.25	127.	37.	12.	0.00	
+	ROUTED TO	R35NL	722.	12.75	127.	37.	12.	0.00	
+									103.94 12.75
+	HYDROGRAPH AT	B36.2L	430.	12.25	41.	12.	4.	0.00	
+	ROUTED TO	R36.2L	277.	12.50	41.	12.	4.	0.00	
+									101.99 12.50
+	HYDROGRAPH AT	S36R1A	790.	12.42	110.	33.	11.	0.63	
+	4 COMBINED AT	C36R1A	1816.	12.50	435.	212.	81.	4.05	
+	HYDROGRAPH AT	S36R1B	762.	12.42	103.	30.	10.	0.59	
+	2 COMBINED AT	C36R1B	2531.	12.42	537.	241.	91.	4.64	
+	HYDROGRAPH AT	S36R2A	292.	12.17	24.	7.	2.	0.13	
+	2 COMBINED AT	C36R2A	2607.	12.42	560.	248.	94.	4.77	
+	ROUTED TO	R36R2A	2607.	12.50	560.	248.	94.	4.77	
+	HYDROGRAPH AT	S36R2B	327.	12.33	40.	12.	4.	0.24	
+	2 COMBINED AT	C36R2B	2821.	12.50	599.	259.	98.	5.01	
+	HYDROGRAPH AT	S51.1	1289.	12.50	198.	59.	20.	1.13	
+	2 COMBINED AT	DVDB-I	4111.	12.50	797.	317.	117.	6.14	
+	ROUTED TO	DVDB-O	868.	13.42	406.	284.	117.	6.14	
+									1880.58 13.42

	DIVERSION TO						
+		B51.1T	868.	0.08	406.	284.	117.	6.14
	HYDROGRAPH AT						
+		D51.1T	0.	0.08	0.	0.	0.	6.14
	HYDROGRAPH AT						
+		52D4	127.	12.25	13.	4.	1.	0.07
	ROUTED TO						
+		52D4R	124.	12.25	13.	4.	1.	0.07
	HYDROGRAPH AT						
+		52D4B	65.	12.17	6.	2.	1.	0.02
	2 COMBINED AT						
+		52D5C1	177.	12.25	19.	6.	2.	0.09
	HYDROGRAPH AT						
+		52D5A	75.	12.17	6.	2.	1.	0.02
	ROUTED TO						
+		52D5AR	72.	12.17	6.	2.	1.	0.02
	2 COMBINED AT						
+		52D5C2	230.	12.25	25.	8.	3.	0.12
	ROUTED TO						
+		52D5R	230.	12.25	25.	8.	3.	0.12
	HYDROGRAPH AT						
+		52C3	23.	12.08	2.	1.	0.	0.01
	ROUTED TO						
+		52C3R	22.	12.17	2.	1.	0.	0.01
	HYDROGRAPH AT						
+		52C3B	52.	12.08	4.	1.	0.	0.02
	2 COMBINED AT						
+		2C3BC1	71.	12.17	6.	2.	1.	0.02
	2 COMBINED AT						
+		2C3BC2	288.	12.17	31.	10.	3.	0.14
	ROUTED TO						
+		52C3BR	274.	12.25	31.	10.	3.	0.14
	HYDROGRAPH AT						
+		51C	195.	12.17	18.	5.	2.	0.10
	DIVERSION TO						
+		51C1DV	131.	12.17	12.	4.	1.	0.10
	HYDROGRAPH AT						
+		51C1D	65.	12.17	6.	2.	1.	0.10
	ROUTED TO						
+		51C1R	59.	12.25	6.	2.	1.	0.10
	HYDROGRAPH AT						
+		52C1	71.	12.17	6.	2.	1.	0.03
	2 COMBINED AT						
+		52C1C	121.	12.17	12.	3.	1.	0.13
	ROUTED TO						
+		52C1R	111.	12.25	12.	3.	1.	0.13
	HYDROGRAPH AT						
+		52C2A	40.	12.17	3.	1.	0.	0.02
	2 COMBINED AT						
+		52C2AC	140.	12.17	15.	4.	1.	0.15
	HYDROGRAPH AT						
+		52C2B	62.	12.17	5.	1.	0.	0.03
	2 COMBINED AT						
+		52C2BC	202.	12.17	20.	6.	2.	0.17
	ROUTED TO						
+		52C2BR	188.	12.25	20.	6.	2.	0.17
	HYDROGRAPH AT						
+		52C2C	45.	12.08	4.	1.	0.	0.01
	2 COMBINED AT						
+		52C2CC	213.	12.25	23.	7.	2.	0.19
	ROUTED TO						
+		52C2R	209.	12.25	23.	7.	2.	0.19

+	HYDROGRAPH AT 52C4	54.	12.17	5.	1.	0.	0.02
+	2 COMBINED AT 52C4C1	239.	12.25	28.	8.	3.	0.20
+	2 COMBINED AT 52C4C2	513.	12.25	59.	18.	6.	0.34
+	ROUTED TO 52C4R	507.	12.25	59.	18.	6.	0.34
+	HYDROGRAPH AT 52C13	71.	12.08	5.	2.	1.	0.02
+	DIVERSION TO STORM	40.	12.08	4.	1.	0.	0.02
+	HYDROGRAPH AT 2C13DV	31.	12.08	1.	0.	0.	0.02
+	HYDROGRAPH AT 52C15	151.	12.08	13.	4.	1.	0.05
+	2 COMBINED AT 2C15C1	182.	12.08	13.	4.	1.	0.07
+	2 COMBINED AT 2C15C2	597.	12.17	73.	22.	8.	0.41
+	ROUTED TO 52C15R	589.	12.25	73.	22.	8.	0.41
+	HYDROGRAPH AT 52C14A	135.	12.17	12.	4.	1.	0.04
+	2 COMBINED AT 2C14AC	699.	12.17	84.	26.	9.	0.45
+	ROUTED TO 2C14AR	680.	12.17	84.	26.	9.	0.45
+	HYDROGRAPH AT 51C1DV	131.	12.17	12.	4.	1.	0.00
+	DIVERSION TO 51C2DV	35.	12.17	3.	1.	0.	0.00
+	HYDROGRAPH AT 51C2D	96.	12.17	9.	3.	1.	0.00
+	ROUTED TO 51C2R	85.	12.17	9.	3.	1.	0.00
+	HYDROGRAPH AT 52C5	40.	12.17	3.	1.	0.	0.02
+	2 COMBINED AT 52C5C	125.	12.17	12.	4.	1.	0.02
+	ROUTED TO 52C5R	123.	12.25	12.	4.	1.	0.02
+	HYDROGRAPH AT 52C6	86.	12.17	8.	2.	1.	0.04
+	2 COMBINED AT 52C6C	193.	12.25	20.	6.	2.	0.05
+	ROUTED TO 52C6R	187.	12.25	20.	6.	2.	0.05
+	HYDROGRAPH AT 51C2DV	35.	12.17	3.	1.	0.	0.00
+	ROUTED TO 51C3R	31.	12.25	3.	1.	0.	0.00
+	HYDROGRAPH AT 51B	707.	12.33	95.	29.	10.	0.57
+	DIVERSION TO 51B1DV	650.	12.33	88.	26.	9.	0.57
+	HYDROGRAPH AT 51B1D	57.	12.33	8.	2.	1.	0.57
+	ROUTED TO 51B1R	56.	12.33	8.	2.	1.	0.57
+	HYDROGRAPH AT 52C7	19.	12.08	1.	0.	0.	0.01

	3 COMBINED AT						
+		52C7C	89.	12.25	12.	4.	1.	0.58
	ROUTED TO						
+		52C7R	86.	12.33	12.	4.	1.	0.58
	HYDROGRAPH AT						
+		51B1DV	650.	12.33	88.	26.	9.	0.00
	DIVERSION TO						
+		51B2DV	546.	12.33	74.	22.	7.	0.00
	HYDROGRAPH AT						
+		51B2D	104.	12.33	14.	4.	1.	0.00
	ROUTED TO						
+		51B2R	102.	12.33	14.	4.	1.	0.00
	HYDROGRAPH AT						
+		52C8	23.	12.08	2.	1.	0.	0.01
	2 COMBINED AT						
+		52C8C	109.	12.33	16.	5.	2.	0.01
	ROUTED TO						
+		52C8R	106.	12.33	16.	5.	2.	0.01
	2 COMBINED AT						
+		52C9C1	193.	12.33	28.	8.	3.	0.59
	ROUTED TO						
+		52C9R1	189.	12.33	28.	8.	3.	0.59
	HYDROGRAPH AT						
+		52C9	180.	12.17	15.	5.	2.	0.07
	2 COMBINED AT						
+		52C9C2	291.	12.17	43.	13.	4.	0.65
	ROUTED TO						
+		52C9R2	289.	12.25	43.	13.	4.	0.65
	2 COMBINED AT						
+		2C10C1	476.	12.25	63.	19.	6.	0.71
	ROUTED TO						
+		2C10R1	472.	12.25	63.	19.	6.	0.71
	HYDROGRAPH AT						
+		52C10	31.	12.08	2.	1.	0.	0.01
	2 COMBINED AT						
+		2C10C2	487.	12.25	65.	20.	7.	0.72
	HYDROGRAPH AT						
+		52C11	102.	12.17	9.	3.	1.	0.04
	ROUTED TO						
+		2C11R1	95.	12.17	9.	3.	1.	0.04
	HYDROGRAPH AT						
+		52C13D	40.	12.08	4.	1.	0.	0.00
	2 COMBINED AT						
+		52C11C	135.	12.17	13.	4.	1.	0.04
	ROUTED TO						
+		2C11CR	128.	12.17	13.	4.	1.	0.04
	2 COMBINED AT						
+		2C11C2	603.	12.25	79.	24.	8.	0.76
	ROUTED TO						
+		2C11R2	595.	12.25	79.	24.	8.	0.76
	HYDROGRAPH AT						
+		52C12	110.	12.08	7.	2.	1.	0.02
	2 COMBINED AT						
+		52C12C	631.	12.25	86.	26.	9.	0.79
	ROUTED TO						
+		52C12R	617.	12.25	86.	26.	9.	0.79
	HYDROGRAPH AT						
+		52C14B	73.	12.08	6.	2.	1.	0.02
	2 COMBINED AT						
+		C14BC1	650.	12.25	91.	28.	9.	0.81
	2 COMBINED AT						
+		C14BC2	1317.	12.25	176.	54.	18.	1.26

+	ROUTED TO	52C14R	1312.	12.25	176.	54.	18.	1.26
+	HYDROGRAPH AT	51B2DV	546.	12.33	74.	22.	7.	0.00
+	DIVERSION TO	51B3DV	459.	12.33	62.	19.	6.	0.00
+	HYDROGRAPH AT	51B3D	87.	12.33	12.	4.	1.	0.00
+	ROUTED TO	51B3R	86.	12.33	12.	4.	1.	0.00
+	HYDROGRAPH AT	52B1	9.	12.08	1.	0.	0.	0.00
+	2 COMBINED AT	52B1C	89.	12.33	12.	4.	1.	0.00
+	ROUTED TO	52B1R	86.	12.33	12.	4.	1.	0.00
+	HYDROGRAPH AT	51B3DV	459.	12.33	62.	19.	6.	0.00
+	DIVERSION TO	51B4DV	376.	12.33	51.	15.	5.	0.00
+	HYDROGRAPH AT	51B4D	83.	12.33	11.	3.	1.	0.00
+	ROUTED TO	51B4R1	80.	12.33	11.	3.	1.	0.00
+	2 COMBINED AT	52B2C1	166.	12.33	24.	7.	2.	0.00
+	ROUTED TO	52B2R1	162.	12.42	24.	7.	2.	0.00
+	HYDROGRAPH AT	52B2	75.	12.17	6.	2.	1.	0.03
+	2 COMBINED AT	52B2C2	193.	12.33	30.	9.	3.	0.04
+	ROUTED TO	52B2R2	190.	12.33	30.	9.	3.	0.04
+	ROUTED TO	52B3R1	188.	12.42	30.	9.	3.	0.04
+	HYDROGRAPH AT	52B3	150.	12.17	13.	4.	1.	0.06
+	2 COMBINED AT	52B3C2	285.	12.25	43.	13.	4.	0.10
+	ROUTED TO	52B3R2	276.	12.33	43.	13.	4.	0.10
+	HYDROGRAPH AT	52B4	84.	12.17	7.	2.	1.	0.03
+	2 COMBINED AT	52B4C	322.	12.25	50.	15.	5.	0.12
+	ROUTED TO	52B4R	315.	12.25	50.	15.	5.	0.12
+	HYDROGRAPH AT	52B5	67.	12.08	6.	2.	1.	0.02
+	2 COMBINED AT	52B5C1	350.	12.25	55.	17.	6.	0.14
+	2 COMBINED AT	52B5C2	1662.	12.25	231.	71.	24.	1.40
+	ROUTED TO	52B5R	1640.	12.25	232.	71.	24.	1.40
+	HYDROGRAPH AT	51B4DV	376.	12.33	51.	15.	5.	0.00
+	DIVERSION TO	51B5DV	256.	12.33	34.	10.	3.	0.00
+	HYDROGRAPH AT	51B5D	120.	12.33	16.	5.	2.	0.00

	ROUTED TO								
+		51B5R	117.	12.33	16.	5.	2.	0.00	
	HYDROGRAPH AT								
+		51B5DV	256.	12.33	34.	10.	3.	0.00	
	DIVERSION TO								
+		51B6DV	136.	12.33	18.	5.	2.	0.00	
	HYDROGRAPH AT								
+		51B6D	120.	12.33	16.	5.	2.	0.00	
	ROUTED TO								
+		51B6R	118.	12.33	16.	5.	2.	0.00	
	HYDROGRAPH AT								
+		51B6DV	136.	12.33	18.	5.	2.	0.00	
	DIVERSION TO								
+		51B7DV	79.	12.33	11.	3.	1.	0.00	
	HYDROGRAPH AT								
+		51B7D	57.	12.33	8.	2.	1.	0.00	
	ROUTED TO								
+		51B7R1	56.	12.33	8.	2.	1.	0.00	
	3 COMBINED AT								
+		51B7C	291.	12.33	40.	12.	4.	0.00	
	ROUTED TO								
+		51B7R2	284.	12.42	40.	12.	4.	0.00	
	HYDROGRAPH AT								
+		52B6	213.	12.17	18.	5.	2.	0.10	
	2 COMBINED AT								
+		52B6C	369.	12.33	58.	17.	6.	0.10	
	ROUTED TO								
+		52B6R	366.	12.42	58.	17.	6.	0.10	
	HYDROGRAPH AT								
+		52B7	284.	12.17	24.	8.	3.	0.08	
	2 COMBINED AT								
+		52B7C1	482.	12.25	81.	25.	8.	0.18	
	2 COMBINED AT								
+		52B7C2	2122.	12.25	313.	96.	32.	1.58	
	HYDROGRAPH AT								
+		52A2	242.	12.17	21.	7.	2.	0.06	
	2 COMBINED AT								
+		52A2C2	2273.	12.25	333.	103.	34.	1.64	
	HYDROGRAPH AT								
+		51B7DV	79.	12.33	11.	3.	1.	0.00	
	ROUTED TO								
+		51B8R	77.	12.42	11.	3.	1.	0.00	
	HYDROGRAPH AT								
+		52A1	351.	12.17	28.	9.	3.	0.13	
	2 COMBINED AT								
+		52A1C	363.	12.17	39.	12.	4.	0.13	
	HYDROGRAPH AT								
+		D51.1	868.	13.42	406.	284.	117.	0.00	
	2 COMBINED AT								
+		C52A	894.	13.42	432.	293.	121.	0.13	
	2 COMBINED AT								
+		C52	2677.	12.25	756.	386.	156.	1.77	
	ROUTED TO								
+		R52	2574.	12.33	755.	386.	156.	1.77	
+									103.84 12.33
	DIVERSION TO								
+		B52T	2574.	0.08	755.	386.	156.	1.77	
	HYDROGRAPH AT								
+		D52T	0.	0.08	0.	0.	0.	1.77	
	2 COMBINED AT								
+		CLEAR	0.	0.08	0.	0.	0.	7.92	
	HYDROGRAPH AT								

+	37A	1204.	12.25	135.	41.	14.	0.68		
DIVERSION TO									
+	37AW	843.	12.25	95.	29.	10.	0.68		
HYDROGRAPH AT									
+	37AE	361.	12.25	41.	12.	4.	0.68		
ROUTED TO									
+	37AE1	366.	12.25	41.	12.	4.	0.68		
+								2.60	12.25
HYDROGRAPH AT									
+	SUB5N	75.	12.17	6.	2.	1.	0.03		
2 COMBINED AT									
+	CP5N	417.	12.25	47.	14.	5.	0.71		
ROUTED TO									
+	RET5N	375.	12.33	44.	14.	5.	0.71		
+								1807.39	12.33
ROUTED TO									
+	R6N.1	321.	12.42	44.	14.	5.	0.71		
+								2.47	12.42
HYDROGRAPH AT									
+	SUB6B	79.	12.17	7.	2.	1.	0.03		
ROUTED TO									
+	SR6B	60.	12.25	7.	2.	1.	0.03		
+								1774.45	12.25
2 COMBINED AT									
+	CP6.1	353.	12.42	51.	16.	5.	0.74		
HYDROGRAPH AT									
+	SUB1N	48.	12.17	4.	1.	0.	0.02		
ROUTED TO									
+	R2NA	49.	12.17	4.	1.	0.	0.02		
+								1.05	12.17
HYDROGRAPH AT									
+	SUB2NA	37.	12.17	3.	1.	0.	0.01		
2 COMBINED AT									
+	CP2NA	86.	12.17	7.	2.	1.	0.03		
ROUTED TO									
+	SR2NA	73.	12.25	6.	2.	1.	0.03		
+								1775.45	12.25
ROUTED TO									
+	R2NB	68.	12.25	6.	2.	1.	0.03		
+								1.43	12.25
HYDROGRAPH AT									
+	SUB2NB	93.	12.17	8.	2.	1.	0.03		
2 COMBINED AT									
+	CP2NB	128.	12.25	14.	4.	1.	0.06		
ROUTED TO									
+	SR2NB	40.	12.58	13.	4.	1.	0.06		
+								1804.15	12.58
ROUTED TO									
+	RCP4N	40.	12.58	13.	4.	1.	0.06		
+								1.03	12.58
HYDROGRAPH AT									
+	SUB6N	121.	12.17	10.	3.	1.	0.05		
ROUTED TO									
+	RET6N	0.	0.08	0.	0.	0.	0.05		
+								1785.53	90.92
ROUTED TO									
+	RCP4N1	0.	0.08	0.	0.	0.	0.05		
2 COMBINED AT									
+	CP4N.1	40.	12.58	13.	4.	1.	0.11		
HYDROGRAPH AT									
+	SUB3N	71.	12.17	6.	2.	1.	0.03		
ROUTED TO									
+	RET3N	4.	13.08	3.	2.	1.	0.03		
+								1795.10	13.17
ROUTED TO									
+	R4N	4.	13.17	3.	2.	1.	0.03		

+								0.29	13.25
	2 COMBINED AT								
+		CP4N.2	44.	12.58	17.	6.	2.	0.14	
	HYDROGRAPH AT								
+		SUB4N	81.	12.17	7.	2.	1.	0.03	
	2 COMBINED AT								
+		CP4N	91.	12.17	23.	8.	3.	0.17	
	ROUTED TO								
+		R6N	89.	12.17	23.	8.	3.	0.17	
+								1.57	12.17
	HYDROGRAPH AT								
+		SUB6A	60.	12.08	4.	1.	0.	0.01	
	2 COMBINED AT								
+		CP6.2	126.	12.17	27.	9.	3.	0.18	
	2 COMBINED AT								
+		CP6N	407.	12.42	77.	25.	8.	0.92	
	ROUTED TO								
+		RCP6N	405.	12.42	77.	25.	8.	0.92	
+								2.09	12.42
	HYDROGRAPH AT								
+		SUB3C	52.	12.08	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CP3C	412.	12.42	80.	26.	9.	0.93	
	ROUTED TO								
+		R3C	394.	12.50	80.	26.	9.	0.93	
+								1672.33	12.50
	HYDROGRAPH AT								
+		GC1018	110.	12.17	9.	3.	1.	0.04	
	HYDROGRAPH AT								
+		GC1-9	65.	12.17	5.	2.	1.	0.03	
	HYDROGRAPH AT								
+		SUB3S	32.	12.17	3.	1.	0.	0.01	
	4 COMBINED AT								
+		CP3S	458.	12.42	97.	31.	10.	1.01	
	ROUTED TO								
+		RT3S	453.	12.50	97.	31.	10.	1.01	
+								1744.13	12.50
	HYDROGRAPH AT								
+		SUB4S	84.	12.17	7.	2.	1.	0.03	
	ROUTED TO								
+		RT4S	85.	12.17	7.	2.	1.	0.03	
+								1743.42	12.17
	HYDROGRAPH AT								
+		GC2-8	35.	12.17	3.	1.	0.	0.01	
	3 COMBINED AT								
+		1PGC28	484.	12.42	107.	34.	11.	1.05	
	HYDROGRAPH AT								
+		SUB3D3	36.	12.17	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CPGC28	493.	12.42	110.	35.	12.	1.07	
	ROUTED TO								
+		SRGC28	495.	12.25	109.	35.	12.	1.07	
+								1712.52	12.25
	ROUTED TO								
+		RT7S	486.	12.50	109.	35.	12.	1.07	
+								1744.30	12.50
	HYDROGRAPH AT								
+		GC7	34.	12.17	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CP7S	498.	12.33	112.	35.	12.	1.08	
	DIVERSION TO								
+		B7ST	498.	0.08	112.	35.	12.	1.08	
	HYDROGRAPH AT								
+		D7ST	0.	0.08	0.	0.	0.	1.08	

	2 COMBINED AT								
+		CLEAR	0.	0.08	0.	0.	0.	9.00	
	HYDROGRAPH AT								
+		SUB3D1	27.	12.08	2.	1.	0.	0.01	
	ROUTED TO								
+		RD1B1	23.	12.17	2.	1.	0.	0.01	
+									1.74 12.17
	HYDROGRAPH AT								
+		SUB3B1	46.	12.08	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CP3B1	62.	12.08	6.	2.	1.	0.02	
	ROUTED TO								
+		RB13F	49.	12.17	6.	2.	1.	0.02	
+									1.82 12.17
	HYDROGRAPH AT								
+		SUB3F	133.	12.08	10.	3.	1.	0.03	
	2 COMBINED AT								
+		CP3F	163.	12.08	15.	5.	2.	0.06	
	HYDROGRAPH AT								
+		SUB3B2	67.	12.17	6.	2.	1.	0.02	
	ROUTED TO								
+		RB2E1	65.	12.17	6.	2.	1.	0.02	
+									1.89 12.17
	ROUTED TO								
+		RB2E2	60.	12.25	6.	2.	1.	0.02	
+									1.93 12.25
	HYDROGRAPH AT								
+		SUB3E1	67.	12.17	6.	2.	1.	0.02	
	2 COMBINED AT								
+		1CPE31	126.	12.17	12.	4.	1.	0.05	
	HYDROGRAPH AT								
+		SUB3D2	58.	12.17	5.	2.	1.	0.02	
	ROUTED TO								
+		RD2E2	57.	12.17	5.	2.	1.	0.02	
+									1.81 12.17
	HYDROGRAPH AT								
+		SUB3E2	37.	12.08	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CP3E2	86.	12.17	8.	2.	1.	0.03	
	HYDROGRAPH AT								
+		PC3	70.	12.25	8.	2.	1.	0.04	
	4 COMBINED AT								
+		CPC3	417.	12.17	43.	13.	4.	0.18	
	DIVERSION TO								
+		BPC3T	417.	0.08	43.	13.	4.	0.18	
	HYDROGRAPH AT								
+		DPC3T	0.	0.08	0.	0.	0.	0.18	
	HYDROGRAPH AT								
+		SUB3E3	61.	12.08	5.	1.	0.	0.02	
	HYDROGRAPH AT								
+		PC4	33.	12.25	4.	1.	0.	0.02	
	HYDROGRAPH AT								
+		D7S	498.	12.33	112.	35.	12.	0.00	
	3 COMBINED AT								
+		CPC4	543.	12.33	120.	38.	13.	0.04	
	DIVERSION TO								
+		BPC4T	543.	0.08	120.	38.	13.	0.04	
	HYDROGRAPH AT								
+		DPC4T	0.	0.08	0.	0.	0.	0.04	
	3 COMBINED AT								
+		CLEAR	0.	0.08	0.	0.	0.	9.22	
	HYDROGRAPH AT								
+		37AW	843.	12.25	95.	29.	10.	0.00	
	ROUTED TO								

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+                    R14R      705.  12.33      95.      29.      10.     0.00
+                                                                          3.39      12.33
        ROUTED TO
+                    RET141    702.  12.33      88.      29.      10.     0.00
+                                                                       1794.47      12.33
        ROUTED TO
+                    R14.1     604.  12.50      88.      29.      10.     0.00
+                                                                          3.16      12.50
        HYDROGRAPH AT
+                    SUB13N     89.  12.17       8.       2.       1.     0.04
        ROUTED TO
+                    R14.1      81.  12.25       8.       2.       1.     0.04
+                                                                          1.70      12.25
        HYDROGRAPH AT
+                    SUB14N     98.  12.17      10.       3.       1.     0.05
        3 COMBINED AT
+                    CP14      688.  12.42     105.      34.      11.     0.09
        ROUTED TO
+                    RET14     627.  12.50      99.      34.      11.     0.09
+                                                                       1755.57      12.50
        ROUTED TO
+                    R18.1     632.  12.58      99.      34.      11.     0.09
+                                                                          2.61      12.58
        HYDROGRAPH AT
+                    SUB20N     52.  12.17       5.       2.       1.     0.02
        ROUTED TO
+                    R19        50.  12.25       5.       2.       1.     0.02
+                                                                          1.22      12.25
        HYDROGRAPH AT
+                    SUB19N     97.  12.17       9.       3.       1.     0.04
        2 COMBINED AT
+                    CP19N     143.  12.17      14.       4.       1.     0.06
        ROUTED TO
+                    R18NC     136.  12.25      14.       4.       1.     0.06
+                                                                          1.73      12.25
        HYDROGRAPH AT
+                    UB18NC     61.  12.17       5.       2.       1.     0.02
        3 COMBINED AT
+                    CP18NC    683.  12.58     117.      40.      13.     0.17
        ROUTED TO
+                    RPC1      683.  12.58     117.      40.      13.     0.17
+                                                                          2.23      12.58
        HYDROGRAPH AT
+                    UB18NA     64.  12.17       5.       2.       1.     0.02
        ROUTED TO
+                    1RPC1      31.  12.33       5.       2.       1.     0.02
+                                                                          0.42      12.33
        HYDROGRAPH AT
+                    UB18NB     27.  12.08       2.       1.       0.     0.01
        ROUTED TO
+                    2RPC1      16.  12.25       2.       1.       0.     0.01
+                                                                          0.21      12.25
        HYDROGRAPH AT
+                    PC1        78.  12.33      12.       3.       1.     0.06
        3 COMBINED AT
+                    1CPC1     124.  12.33      19.       6.       2.     0.09
        ROUTED TO
+                    SRPC1     123.  12.33      19.       6.       2.     0.09
+                                                                       1748.35      12.33
        2 COMBINED AT
+                    CPC1      784.  12.50     137.      46.      15.     0.26
        ROUTED TO
+                    R16NA1    782.  12.58     137.      46.      15.     0.26
+                                                                          2.13      12.58
        HYDROGRAPH AT
+                    UB16NA     42.  12.17       3.       1.       0.     0.01
```

	ROUTED TO								
+		R16NA1	38.	12.17	3.	1.	0.	0.01	
+									0.76 12.17
	2 COMBINED AT								
+		C16NA1	791.	12.58	140.	47.	16.	0.28	
	ROUTED TO								
+		R16NB1	803.	12.58	140.	47.	16.	0.28	
+									2.16 12.58
	HYDROGRAPH AT								
+		UB16NB	47.	12.17	4.	1.	0.	0.02	
	ROUTED TO								
+		R16NB1	43.	12.17	4.	1.	0.	0.02	
+									0.82 12.17
	2 COMBINED AT								
+		C16NB1	812.	12.58	144.	48.	16.	0.29	
	ROUTED TO								
+		R16NC1	817.	12.58	144.	48.	16.	0.29	
+									2.72 12.58
	HYDROGRAPH AT								
+		SUB7N	79.	12.17	6.	2.	1.	0.03	
	ROUTED TO								
+		R8NC	71.	12.17	6.	2.	1.	0.03	
+									1.58 12.17
	HYDROGRAPH AT								
+		SUB8NA	15.	12.08	1.	0.	0.	0.00	
	ROUTED TO								
+		SR8NA	1.	13.00	1.	0.	0.	0.00	
+									1793.61 13.08
	ROUTED TO								
+		R8NB	1.	13.00	1.	0.	0.	0.00	
+									0.01 13.08
	HYDROGRAPH AT								
+		SUB8NB	40.	12.08	3.	1.	0.	0.01	
	2 COMBINED AT								
+		CP8NB	40.	12.08	3.	1.	0.	0.02	
	ROUTED TO								
+		SR8NB	2.	11.83	2.	1.	0.	0.02	
+									1787.78 13.67
	ROUTED TO								
+		R8NC	2.	11.92	2.	1.	0.	0.02	
+									0.02 11.92
	HYDROGRAPH AT								
+		SUB8NC	57.	12.08	4.	1.	0.	0.02	
	3 COMBINED AT								
+		CP8NC	112.	12.17	12.	4.	1.	0.07	
	ROUTED TO								
+		SR8NC	35.	12.50	12.	4.	1.	0.07	
+									1780.15 12.50
	ROUTED TO								
+		R9N	33.	12.58	12.	4.	1.	0.07	
+									0.75 12.58
	HYDROGRAPH AT								
+		SUB9N	147.	12.17	12.	4.	1.	0.05	
	2 COMBINED AT								
+		CP9N	158.	12.17	24.	8.	3.	0.12	
	ROUTED TO								
+		R10B	156.	12.17	24.	8.	3.	0.12	
+									1.75 12.17
	HYDROGRAPH AT								
+		SUB10B	88.	12.08	7.	2.	1.	0.03	
	2 COMBINED AT								
+		CP10B	233.	12.17	31.	10.	3.	0.15	
	ROUTED TO								
+		R11NA	237.	12.17	31.	10.	3.	0.15	
+									1.80 12.17
	HYDROGRAPH AT								
+		UB11NA	24.	12.08	2.	0.	0.	0.01	

```
                2 COMBINED AT
+                       CP11NA     253.   12.17      32.      10.       3.    0.16
                ROUTED TO
+                       SR11NA     147.   12.25      32.      10.       3.    0.16
+                                                                          1743.57     12.25
                ROUTED TO
+                       R11NB      160.   12.33      32.      10.       3.    0.16
+                                                                             0.80     12.33
                HYDROGRAPH AT
+                       UB11NB      25.   12.08       2.       0.       0.    0.01
                2 COMBINED AT
+                       CP11NB     166.   12.33      33.      11.       4.    0.17
                ROUTED TO
+                       SR11NB     100.   12.50      32.      11.       4.    0.17
+                                                                          1737.87     12.50
                ROUTED TO
+                       R11NC      100.   12.50      32.      11.       4.    0.17
+                                                                             0.62     12.50
                HYDROGRAPH AT
+                       UB11NC      22.   12.08       1.       0.       0.    0.01
                2 COMBINED AT
+                       C11NC1     104.   12.42      34.      11.       4.    0.17
                HYDROGRAPH AT
+                       SUB10A      90.   12.08       7.       2.       1.    0.03
                ROUTED TO
+                       R12NB       93.   12.17       7.       2.       1.    0.03
+                                                                             0.81     12.17
                HYDROGRAPH AT
+                       UB12NA      38.   12.08       3.       1.       0.    0.02
                ROUTED TO
+                       SR12NA       1.   16.17       1.       1.       0.    0.02
+                                                                          1743.49     16.67
                ROUTED TO
+                       R12NA        1.   16.17       1.       1.       0.    0.02
+                                                                             0.01     16.75
                HYDROGRAPH AT
+                       UB12NB      39.   12.08       3.       1.       0.    0.02
                3 COMBINED AT
+                       CP12NB     131.   12.17      11.       4.       1.    0.06
                ROUTED TO
+                       SR12NB       6.   13.58       3.       2.       1.    0.06
+                                                                          1746.03     13.50
                ROUTED TO
+                       R11NC2       6.   13.58       3.       2.       1.    0.06
+                                                                             0.19     13.58
                2 COMBINED AT
+                       CP11NC     106.   12.42      37.      13.       5.    0.23
                ROUTED TO
+                       SR11NC      94.   12.67      35.      13.       5.    0.23
+                                                                          1735.80     12.67
                ROUTED TO
+                       R16NC       93.   12.67      35.      13.       5.    0.23
+                                                                             1.60     12.67
                HYDROGRAPH AT
+                       UB16NC     100.   12.17       8.       3.       1.    0.03
                2 COMBINED AT
+                       CP16NC     109.   12.17      42.      16.       6.    0.27
                ROUTED TO
+                       R16NC1     109.   12.17      42.      16.       6.    0.27
+                                                                             1.24     12.17
                2 COMBINED AT
+                       C16NC1     904.   12.58     186.      63.      22.    0.56
                ROUTED TO
+                       R15N1      889.   12.67     186.      63.      22.    0.56
+                                                                             2.83     12.67
                HYDROGRAPH AT
```

+		PC2	103.	12.17	10.	3.	1.	0.05		
	2 COMBINED AT									
+		CP15N1	916.	12.58	196.	66.	23.	0.61		
	ROUTED TO									
+		SRPC2	912.	12.67	196.	66.	23.	0.61		
+									1735.21	12.67
	HYDROGRAPH AT									
+		UB17NA	31.	12.08	2.	1.	0.	0.01		
	ROUTED TO									
+		SR17NA	3.	12.58	1.	1.	0.	0.01		
+									1759.15	12.58
	ROUTED TO									
+		R17NB	3.	12.67	1.	1.	0.	0.01		
+									1756.04	12.67
	HYDROGRAPH AT									
+		UB17NB	30.	12.08	2.	1.	0.	0.01		
	2 COMBINED AT									
+		CP17NB	31.	12.08	4.	1.	0.	0.02		
	ROUTED TO									
+		SR17NB	1.	11.67	1.	1.	0.	0.02		
+									1756.84	23.25
	ROUTED TO									
+		R17A	1.	11.75	1.	1.	0.	0.02		
+									1752.09	11.75
	HYDROGRAPH AT									
+		SUB17A	30.	12.08	2.	1.	0.	0.01		
	2 COMBINED AT									
+		CP17A1	31.	12.08	3.	2.	1.	0.03		
	HYDROGRAPH AT									
+		UB17NC	20.	12.08	1.	0.	0.	0.01		
	2 COMBINED AT									
+		CP17A	51.	12.08	4.	2.	1.	0.03		
	ROUTED TO									
+		R15N	35.	12.17	4.	2.	1.	0.03		
+									0.95	12.17
	HYDROGRAPH AT									
+		SUB15N	135.	12.17	11.	4.	1.	0.04		
	2 COMBINED AT									
+		CP15N	170.	12.17	15.	5.	2.	0.07		
	ROUTED TO									
+		R15N2	174.	12.17	15.	5.	2.	0.07		
+									1.94	12.17
	2 COMBINED AT									
+		CP15N2	937.	12.67	210.	71.	25.	0.69		
	ROUTED TO									
+		R15N2	903.	12.75	210.	71.	25.	0.69		
+									2.53	12.75
	HYDROGRAPH AT									
+		DPC3	417.	12.17	43.	13.	4.	0.00		
	2 COMBINED AT									
+		CPC3A	964.	12.75	251.	84.	29.	0.69		
	ROUTED TO									
+		RPC3A	962.	12.75	251.	84.	29.	0.69		
+									2.60	12.75
	HYDROGRAPH AT									
+		DPC4	543.	12.33	120.	38.	13.	0.00		
	2 COMBINED AT									
+		CPC4A	1357.	12.75	371.	122.	42.	0.69		
	ROUTED TO									
+		RPC4A	1352.	12.75	370.	122.	42.	0.69		
+									3.03	12.75
	DIVERSION TO									
+		BPC4AT	1352.	0.08	370.	122.	42.	0.69		
	HYDROGRAPH AT									
+		DPC4AT	0.	0.08	0.	0.	0.	0.69		

	HYDROGRAPH AT								
+		SUB1-2	173.	12.17	16.	5.	2.	0.06	
	HYDROGRAPH AT								
+		GCRB18	28.	12.17	2.	1.	0.	0.01	
	2 COMBINED AT								
+		CPRET1	201.	12.17	19.	6.	2.	0.07	
	ROUTED TO								
+		SR18S	0.	0.08	0.	0.	0.	0.07	
+									1739.48 84.33
	HYDROGRAPH AT								
+		SUB5S	73.	12.17	6.	2.	1.	0.03	
	HYDROGRAPH AT								
+		GC1216	91.	12.17	8.	2.	1.	0.04	
	HYDROGRAPH AT								
+		GC1415	110.	12.17	9.	3.	1.	0.05	
	HYDROGRAPH AT								
+		SUB6S	54.	12.17	5.	2.	1.	0.02	
	HYDROGRAPH AT								
+		SUB7S	79.	12.17	7.	2.	1.	0.03	
	5 COMBINED AT								
+		CPRET2	407.	12.17	35.	10.	3.	0.16	
	ROUTED TO								
+		SRRET2	0.	0.08	0.	0.	0.	0.16	
+									1690.12 81.67
	2 COMBINED AT								
+		CLEAR	0.	0.08	0.	0.	0.	0.22	
	HYDROGRAPH AT								
+		SUB8S	76.	12.17	6.	2.	1.	0.03	
	ROUTED TO								
+		RGC36	65.	12.17	6.	2.	1.	0.03	
+									1.16 12.17
	HYDROGRAPH AT								
+		GC36	95.	12.17	8.	2.	1.	0.04	
	2 COMBINED AT								
+		C1GC36	160.	12.17	15.	4.	1.	0.07	
	HYDROGRAPH AT								
+		SUB9S	66.	12.17	6.	2.	1.	0.02	
	ROUTED TO								
+		R9S	67.	12.17	6.	2.	1.	0.02	
+									3.46 12.17
	2 COMBINED AT								
+		CPGC36	227.	12.17	20.	6.	2.	0.09	
	ROUTED TO								
+		SRGC36	255.	12.17	20.	6.	2.	0.09	
+									1669.27 12.17
	HYDROGRAPH AT								
+		SUB7A	27.	12.17	2.	1.	0.	0.01	
	ROUTED TO								
+		SR7A	8.	12.42	2.	1.	0.	0.01	
+									1702.25 12.42
	ROUTED TO								
+		R10S	7.	12.58	2.	1.	0.	0.01	
+									2.59 12.58
	HYDROGRAPH AT								
+		SUB10S	76.	12.17	7.	2.	1.	0.02	
	2 COMBINED AT								
+		CP10S	78.	12.17	9.	3.	1.	0.03	
	HYDROGRAPH AT								
+		SUB11S	111.	12.08	7.	2.	1.	0.02	
	ROUTED TO								
+		R11S	83.	12.17	7.	2.	1.	0.02	
+									3.69 12.17
	2 COMBINED AT								
+		C10SA	162.	12.17	16.	5.	2.	0.06	
	ROUTED TO								

+	R10SA	166.	12.17	16.	5.	2.	0.06		
+								4.25	12.17
HYDROGRAPH AT									
+	GC45	48.	12.08	3.	1.	0.	0.01		
HYDROGRAPH AT									
+	PC5	55.	12.25	7.	2.	1.	0.04		
HYDROGRAPH AT									
+	DPC4A	1352.	12.75	370.	122.	42.	0.00		
6 COMBINED AT									
+	CPC5	1450.	12.33	414.	135.	46.	0.42		
ROUTED TO									
+	RC5	1420.	12.42	414.	135.	46.	0.42		
+								3.10	12.42
HYDROGRAPH AT									
+	SCN5D	78.	12.25	8.	2.	1.	0.05		
2 COMBINED AT									
+	CN5D	1459.	12.42	422.	138.	47.	0.47		
HYDROGRAPH AT									
+	D52	2574.	12.33	755.	386.	156.	0.00		
HYDROGRAPH AT									
+	S53A	300.	12.25	32.	9.	3.	0.18		
2 COMBINED AT									
+	C53	2851.	12.25	787.	395.	159.	0.18		
HYDROGRAPH AT									
+	S53A1	525.	12.33	63.	19.	6.	0.34		
2 COMBINED AT									
+	C53A1	3355.	12.25	850.	413.	165.	0.52		
HYDROGRAPH AT									
+	SCN6B	155.	12.17	13.	4.	1.	0.05		
2 COMBINED AT									
+	C53A	3483.	12.25	863.	417.	167.	0.57		
HYDROGRAPH AT									
+	SCN6D	73.	12.17	6.	2.	1.	0.04		
2 COMBINED AT									
+	CP6D	3525.	12.25	868.	419.	167.	0.61		
HYDROGRAPH AT									
+	SCN6C	363.	12.17	32.	10.	3.	0.14		
2 COMBINED AT									
+	CP6C	3821.	12.25	899.	427.	171.	0.74		
2 COMBINED AT									
+	CP5D	5092.	12.33	1321.	561.	218.	1.21		
HYDROGRAPH AT									
+	SCN5C	297.	12.25	30.	9.	3.	0.19		
HYDROGRAPH AT									
+	SCN6E	42.	12.50	7.	2.	1.	0.04		
3 COMBINED AT									
+	PIMA	5410.	12.25	1358.	571.	221.	1.45		
HYDROGRAPH AT									
+	SCNA1	175.	12.25	19.	6.	2.	0.11		
HYDROGRAPH AT									
+	1G	197.	12.08	15.	5.	2.	0.06		
ROUTED TO									
+	DET1G	26.	12.50	14.	5.	2.	0.06		
+								2.96	12.50
ROUTED TO									
+	R1GI1	26.	12.58	14.	5.	2.	0.06		
+								0.56	12.58
HYDROGRAPH AT									
+	1I	187.	12.08	16.	5.	2.	0.06		
ROUTED TO									
+	DET1I	43.	12.42	15.	5.	2.	0.06		
+								3.13	12.42
2 COMBINED AT									
+	CP1I1	67.	12.42	29.	9.	3.	0.12		

```
          HYDROGRAPH AT
+                          1J      63.   12.08        5.        2.        1.     0.02
          ROUTED TO
+                       DET1J       8.   12.50        4.        1.        1.     0.02
+                                                                                          2.21      12.50
          ROUTED TO
+                       R1JI2       8.   12.67        4.        1.        1.     0.02
+                                                                                          0.89      12.67
          2 COMBINED AT
+                       CP1I2      75.   12.50       33.       11.        4.     0.14
          ROUTED TO
+                       R1IL1      75.   12.50       33.       11.        4.     0.14
+                                                                                          1.17      12.50
          HYDROGRAPH AT
+                          1L     107.   12.25       13.        4.        1.     0.05
          2 COMBINED AT
+                       CP1L1     168.   12.33       46.       15.        5.     0.19
          ROUTED TO
+                         RA2     153.   12.50       46.       15.        5.     0.19
+                                                                                          0.88      12.50
          HYDROGRAPH AT
+                       SCNA2     295.   12.25       33.        9.        3.     0.19
          2 COMBINED AT
+                         CA2     392.   12.33       79.       25.        8.     0.37
          2 COMBINED AT
+                         CPA2    562.   12.25       98.       30.       10.     0.48
          HYDROGRAPH AT
+                       SCNA3     272.   12.33       36.       10.        3.     0.20
          2 COMBINED AT
+                         CPA3    809.   12.33      133.       40.       14.     0.69
          HYDROGRAPH AT
+                       SCNA4     221.   12.25       26.        7.        2.     0.15
          2 COMBINED AT
+                         CPA4   1019.   12.33      159.       48.       16.     0.83
          HYDROGRAPH AT
+                       SCNA5      59.   12.58       12.        4.        1.     0.07
          2 COMBINED AT
+                      MILLER    1068.   12.33      172.       51.       17.     0.90
          2 COMBINED AT
+                       OLDB-I   6460.   12.25     1529.      621.      239.     2.35
          ROUTED TO
+                       OLDB-O   1985.   13.50     1518.      621.      239.     2.35
+                                                                                       1607.84      13.50
1
*** NORMAL END OF HEC-1 ***
```

APPENDIX G

Happy Valley Detention Basin Worst Case
100-Year, 24-Hour HEC-1 Output File Printout

```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*            VERSION 4.0.1E         *
*     Lahey F77L-EM/32 version 5.01 *
*       Dodson & Associates, Inc.   *
*  RUN DATE  11/11/97  TIME  16:14:50  *
*************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 551-1748          *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

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1                                          HEC-1 INPUT                                                    PAGE  1

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

  1           ID    PIMA ROAD THREE BASINS                                  File: HAPPY-24.IH1
  2           ID    by  Stantech for the City of Scottsdale            Original: 08-07-97     mcg
  3           ID        Project:  28900051
  4           ID
  5           ID
  6           ID    100-YEAR, 24-HOUR STORM
  7           ID        10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
  8           ID        100% OF FLOWSPLITS ARE ROUTED TO HAPPY VALLEY DETENTION BASIN
  9           ID
              *DIAGRAM
 10           IT       5                    2000
 11           IO       5
              *

 12           KK    S30N
 13           KM     RUNOFF FROM SUBBASIN 30N
 14           BA  0.6518
 15           PH            11.5     .84    1.53    2.46    2.75    2.94    3.31    3.74    4.17
 16           LS              82      13              82      13
 17           UK     300   0.350    0.13      20
 18           UK     300   0.050    0.13      80
 19           RK    1550   0.069   0.045  0.0096    TRAP       0      12
 20           RK   10520   0.038   0.040            TRAP      15      15
              *

 21           KK    R30N
 22           KM     NORMAL DEPTH CHANNEL ROUTE FROM C30N TO C31.1 THROUGH PIMA CHANNEL
 23           RS       1    FLOW      -1
 24           RC   0.022   0.022   0.022    2470    0.01
 25           RX    1000    1012    1020    1028    1036    1044    1052    1064
 26           RY     107     104     102     100     100     102     104     107
              *

 27           KK   S31.1
 28           KM     RUNOFF FROM SUBBASIN 31.1
 29           BA  0.2663
 30           LS            76.6      13            76.6      13
 31           UK     300   0.567    0.13      10
 32           UK     300   0.050    0.13      90
 33           RK    1950   0.056   0.045  0.0147    TRAP       0      10
 34           RK    7600   0.035   0.040            TRAP      22       8
              *

 35           KK   C31.1
 36           KM     COMBINE ROUTED HYDROGRAPH FROM S30N WITH RUNOFF FROM SUBBASIN 31.1
 37           HC       2
              *
              *  R31.1
              *   ****  TOO SHORT TO ROUTE  ****
              *    NORMAL DEPTH CHANNEL ROUTE FROM C31.1 TO C34.1 THROUGH PIMA CHANNEL
              *       1    FLOW      -1
              *  0.022   0.022   0.022    1500    0.01
              *   1000    1012    1020    1028    1048    1056    1064    1076
              *    107     104     102     100     100     102     104     107
              *
1                                          HEC-1 INPUT                                                    PAGE  2
```

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

 38           KK   S34.2
 39           KM     RUNOFF FROM SUBBASIN 34.2
 40           KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
 41           BA  0.4441
 42           LS            77.3      12            77.3      12
 43           UK      50    0.10    0.13      10
 44           UK     300   0.040    0.13      90
 45           RK    2200  0.0452   0.045  0.0538    TRAP       0      10
 46           RK    8150  0.0386   0.045            TRAP       0      10
              *

 47           KK   C34.2
 48           KM     COMBINE ROUTED HYDROGRAPH FROM C31.1 WITH RUNOFF FROM SUBBASIN 34.2
 49           HC       2
              *

 50           KK    S35N
 51           KM     RUNOFF FROM SUBBASIN 35N
 52           BA  0.5482
 53           LS              82      13              82      13
 54           UK     300   0.491    0.13      15
 55           UK     300   0.113    0.13      85
 56           RK    2700   0.079   0.045  0.0242    TRAP       3       6
 57           RK    5050   0.028   0.040            TRAP      15      15
              *

 58           KK   D35NR
 59           KM     DIVERSION JUST DOWNSTREAM OF THE ALMA SCHOOL ROAD CULVERT
 60           KM        RIGHT BRANCH IS ROUTED TO C36.2
 61           KM        100% OF FLOWSPLIT IS ROUTED TO HAPPY VALLEY DETENTION BASIN
 62           DT   D35NL
 63           DI       0      10      66     168     343     581     805     977    1168    1320
 64           DQ       0       0       0       0       0       0       0       0       0       0
              *

 65           KK   R35NR
 66           KM     NORMAL DEPTH CHANNEL ROUTE FROM S35N TO C36.2
 67           KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
 68           RS       1    FLOW      -1
 69           RC    0.06    0.04    0.06    3500  0.0343
 70           RX    1000    1006    1026    1027    1057    1058    1078    1084
 71           RY     105     103     101     100     100     101     103     105
              *

 72           KK   S36.2
 73           KM     RUNOFF FROM SUBBASIN 36.2
 74           BA  0.2087
 75           LS            76.6      13            76.6      13
 76           UK     300   0.580    0.13       5
 77           UK     300   0.100    0.13      95
 78           RK    1800   0.036   0.045  0.0145    TRAP      10      10
 79           RK    3520   0.028   0.040            TRAP      20       6
              *
1                                          HEC-1 INPUT                                          PAGE  3
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 80           KK   C36.2
 81           KM     COMBINE ROUTED HYDROGRAPH FROM S35N WITH RUNOFF FROM SUBBASIN 36.2
 82           HC       2
              *

 83           KK  D36.2R
 84           KM     DIVERSION AT DESERT HIGHLANDS DRIVE
 85           KM        RIGHT BRANCH, AT GOLF CART CROSSING IS ROUTED TO C34.1
 86           KM        100% OF FLOWSPLIT IS ROUTED TO HAPPY VALLEY DETENTION BASIN
 87           DT  D36.2L
 88           DI       0      36     166     288     360     430     538     681     859    1074
 89           DQ       0       0       0       0       0       0       0       0       0       0
              *

 90           KK  R36.2R
 91           KM     NORMAL DEPTH CHANNEL ROUTE FROM C36.2 TO C34.1
 92           KM        SOURCE: 1993 MAPPING (2' CI) PROVIDED BY COS
 93           RS       4    FLOW      -1
 94           RC    0.06    0.04    0.06    7800  0.0321
 95           RX    1000    1043    1053    1068    1093    1098    1133    1218
 96           RY   102.6   100.6   100.5     100     100   100.5   100.6   102.6
              *

 97           KK   S34.1
 98           KM     RUNOFF FROM SUBBASIN 34.1
 99           KM        RAINFALL LOSSES FOR GREINER SUBBASINS 31.2 AND 34.1 ARE WEIGHTED BY AREA
100           BA  1.1635
101           LS            77.3      12            77.3      12
102           UK     300   0.590    0.13      25
103           UK     300   0.040    0.13      75
104           RK    2570   0.085   0.045  0.0214    TRAP       0      10
105           RK    8800  0.0325   0.040            TRAP      20      10
```

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                    *
 106                KK   C34.1
 107                KM     COMBINE ROUTED HYDROGRAPH FROM C36.2 W/RUNOFF FROM SUBBASIN 34.1
 108                HC       2
                    *

 109                KK  HVDB-I
 110                KM     COMBINE HYDROGRAPH FROM C34.2 W/ C34.1
 111                HC       2
                    *

 112                KK  HVDB-O
 113                KO       1
 114                KM     DETENTION BASIN AT HAPPY VALLEY ROAD - NONREGULATORY STRUCTURE
 115                KM        PRINCIPAL SPILLWAY:  42" x 800' RCP WITH A SLOPE OF 0.5%
 116                KM        EMERGENCY SPILLWAY:  200' x 1.5' RECT. WEIR - CREST ELEV = 2089.5
 117                KM        13 ACRE-FEET OF STORAGE FOR SEDIMENTAION
 118                RS       1    STOR      -1
 119                SV       0     0.2     0.7     1.8     3.4     5.4    36.3    88.1   150.2   224.3
 120                SV   240.0
 121                SE    2065    2066    2067    2068    2069    2070    2075    2080    2085    2090
1                                                HEC-1 INPUT                                                    PAGE  4

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

 122                SE    2091
 123                SQ       0      20      30      40      60      70      80      90     100     110
 124                SQ     120     130     140   143.6     328   452.6   599.4     767   954.1  1160.2
 125                SE  2065.0 2066.77 2067.45 2067.94 2068.95 2070.44 2072.26 2074.32 2076.62 2079.16
 126                SE  2081.9 2084.98 2088.25  2089.5  2090.0  2090.2  2090.4  2090.6  2090.8    2091
                    *
 127                ZZ
1
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   12        S30N
                V
                V
   21        R30N
                .
                .
   27           .       S31.1
                .           .
                .           .
   35      C31.1............
                .
                .
   38           .       S34.2
                .           .
                .           .
   47      C34.2............
                .
                .
   50           .        S35N
                .           .
                .           .
   62           .           .-------->  D35NL
   58           .       D35NR
                .           V
                .           V
   65           .       R35NR
                .           .
                .           .
   72           .           .       S36.2
                .           .           .
                .           .           .
   80           .       C36.2............
                .           .
                .           .
   87           .           .-------->  D36.2L
   83           .      D36.2R
                .           V
                .           V
   90           .      R36.2R
                .           .
                .           .
   97           .           .       S34.1
                .           .           .
                .           .           .
  106           .       C34.1............
                .           .
                .           .
  109      HVDB-I............
                V
                V
  112      HVDB-O

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*************************************                                    *************************************
```

```
*                                        *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)     *
*           MAY  1991                    *
*        VERSION 4.0.1E                  *
*  Lahey F77L-EM/32 version 5.01         *
*    Dodson & Associates, Inc.           *
* RUN DATE  11/11/97  TIME  16:14:50     *
******************************************
```

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

```
                          PIMA ROAD THREE BASINS                              File: HAPPY-24.IH1
                          by  Stantech for the City of Scottsdale          Original: 08-07-97      mcg
                              Project:  28900051

                          100-YEAR, 24-HOUR STORM
                              10% LEVEL DESIGN FOR HAPPY VALLEY DETENTION BASIN
                              100% OF FLOWSPLITS ARE ROUTED TO HAPPY VALLEY DETENTION BASIN

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

     IT          HYDROGRAPH TIME DATA
                        NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME        0000  STARTING TIME
                          NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      7    0  ENDING DATE
                      NDTIME        2235  ENDING TIME
                       ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE  166.58 HOURS

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

          *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1


          *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT



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

              ***************
              *             *
 112 KK       *   HVDB-O    *
              *             *
              ***************

 113 KO          OUTPUT CONTROL VARIABLES
                       IPRNT           1  PRINT CONTROL
                       IPLOT           0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE
                           DETENTION BASIN AT HAPPY VALLEY ROAD - NONREGULATORY STRUCTURE
                              PRINCIPAL SPILLWAY:  42" x 800' RCP WITH A SLOPE OF 0.5%
                              EMERGENCY SPILLWAY:  200' x 1.5' RECT. WEIR - CREST ELEV = 2089.5
                              13 ACRE-FEET OF STORAGE FOR SEDIMENTAION

               HYDROGRAPH ROUTING DATA

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

 119 SV            STORAGE        0.0       0.2       0.7       1.8       3.4       5.4      36.3      88.1     150.2     224.3
                                240.0

 121 SE          ELEVATION    2065.00   2066.00   2067.00   2068.00   2069.00   2070.00   2075.00   2080.00   2085.00   2090.00
                              2091.00

 123 SQ          DISCHARGE         0.       20.       30.       40.       60.       70.       80.       90.      100.      110.
                                 120.      130.      140.      144.      328.      453.      599.      767.      954.     1160.
```

125 SE	ELEVATION	2065.00	2066.77	2067.45	2067.94	2068.95	2070.44	2072.26	2074.32	2076.62	2079.16
		2081.90	2084.98	2088.25	2089.50	2090.00	2090.20	2090.40	2090.60	2090.80	2091.00

...

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.20	0.59	0.70	1.19	1.73	1.80	3.32	3.40	5.40
OUTFLOW	0.00	11.30	20.00	23.38	30.00	40.00	41.19	60.00	60.34	67.05
ELEVATION	2065.00	2066.00	2066.77	2067.00	2067.45	2067.94	2068.00	2068.95	2069.00	2070.00
STORAGE	8.12	19.37	32.10	36.30	53.08	79.40	88.10	111.70	149.95	150.20
OUTFLOW	70.00	80.00	90.00	92.96	100.00	110.00	113.07	120.00	130.00	130.06
ELEVATION	2070.44	2072.26	2074.32	2075.00	2076.62	2079.16	2080.00	2081.90	2084.98	2085.00
STORAGE	198.37	216.89	224.30	227.44	230.58	233.72	236.86	240.00		
OUTFLOW	140.00	143.60	328.00	452.60	599.40	767.00	954.10	1160.20		
ELEVATION	2088.25	2089.50	2090.00	2090.20	2090.40	2090.60	2090.80	2091.00		

****

HYDROGRAPH AT STATION HVDB-O

****

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	0.0	2065.0	3		0735	668	0.	0.0	2065.0	5		15101335		0.	0.0	2065.0
1		0005	2	0.	0.0	2065.0	3		0740	669	0.	0.0	2065.0	5		15151336		0.	0.0	2065.0
1		0010	3	0.	0.0	2065.0	3		0745	670	0.	0.0	2065.0	5		15201337		0.	0.0	2065.0
1		0015	4	0.	0.0	2065.0	3		0750	671	0.	0.0	2065.0	5		15251338		0.	0.0	2065.0
1		0020	5	0.	0.0	2065.0	3		0755	672	0.	0.0	2065.0	5		15301339		0.	0.0	2065.0
1		0025	6	0.	0.0	2065.0	3		0800	673	0.	0.0	2065.0	5		15351340		0.	0.0	2065.0
1		0030	7	0.	0.0	2065.0	3		0805	674	0.	0.0	2065.0	5		15401341		0.	0.0	2065.0
1		0035	8	0.	0.0	2065.0	3		0810	675	0.	0.0	2065.0	5		15451342		0.	0.0	2065.0
1		0040	9	0.	0.0	2065.0	3		0815	676	0.	0.0	2065.0	5		15501343		0.	0.0	2065.0
1		0045	10	0.	0.0	2065.0	3		0820	677	0.	0.0	2065.0	5		15551344		0.	0.0	2065.0
1		0050	11	0.	0.0	2065.0	3		0825	678	0.	0.0	2065.0	5		16001345		0.	0.0	2065.0
1		0055	12	0.	0.0	2065.0	3		0830	679	0.	0.0	2065.0	5		16051346		0.	0.0	2065.0
1		0100	13	0.	0.0	2065.0	3		0835	680	0.	0.0	2065.0	5		16101347		0.	0.0	2065.0
1		0105	14	0.	0.0	2065.0	3		0840	681	0.	0.0	2065.0	5		16151348		0.	0.0	2065.0
1		0110	15	0.	0.0	2065.0	3		0845	682	0.	0.0	2065.0	5		16201349		0.	0.0	2065.0
1		0115	16	0.	0.0	2065.0	3		0850	683	0.	0.0	2065.0	5		16251350		0.	0.0	2065.0
1		0120	17	0.	0.0	2065.0	3		0855	684	0.	0.0	2065.0	5		16301351		0.	0.0	2065.0
1		0125	18	0.	0.0	2065.0	3		0900	685	0.	0.0	2065.0	5		16351352		0.	0.0	2065.0
1		0130	19	0.	0.0	2065.0	3		0905	686	0.	0.0	2065.0	5		16401353		0.	0.0	2065.0
1		0135	20	0.	0.0	2065.0	3		0910	687	0.	0.0	2065.0	5		16451354		0.	0.0	2065.0
1		0140	21	0.	0.0	2065.0	3		0915	688	0.	0.0	2065.0	5		16501355		0.	0.0	2065.0
1		0145	22	0.	0.0	2065.0	3		0920	689	0.	0.0	2065.0	5		16551356		0.	0.0	2065.0
1		0150	23	0.	0.0	2065.0	3		0925	690	0.	0.0	2065.0	5		17001357		0.	0.0	2065.0
1		0155	24	0.	0.0	2065.0	3		0930	691	0.	0.0	2065.0	5		17051358		0.	0.0	2065.0
1		0200	25	0.	0.0	2065.0	3		0935	692	0.	0.0	2065.0	5		17101359		0.	0.0	2065.0
1		0205	26	0.	0.0	2065.0	3		0940	693	0.	0.0	2065.0	5		17151360		0.	0.0	2065.0
1		0210	27	1.	0.0	2065.0	3		0945	694	0.	0.0	2065.0	5		17201361		0.	0.0	2065.0
1		0215	28	1.	0.0	2065.1	3		0950	695	0.	0.0	2065.0	5		17251362		0.	0.0	2065.0
1		0220	29	1.	0.0	2065.1	3		0955	696	0.	0.0	2065.0	5		17301363		0.	0.0	2065.0
1		0225	30	1.	0.0	2065.1	3		1000	697	0.	0.0	2065.0	5		17351364		0.	0.0	2065.0
1		0230	31	1.	0.0	2065.1	3		1005	698	0.	0.0	2065.0	5		17401365		0.	0.0	2065.0
1		0235	32	1.	0.0	2065.1	3		1010	699	0.	0.0	2065.0	5		17451366		0.	0.0	2065.0
1		0240	33	1.	0.0	2065.1	3		1015	700	0.	0.0	2065.0	5		17501367		0.	0.0	2065.0
1		0245	34	1.	0.0	2065.1	3		1020	701	0.	0.0	2065.0	5		17551368		0.	0.0	2065.0
1		0250	35	2.	0.0	2065.1	3		1025	702	0.	0.0	2065.0	5		18001369		0.	0.0	2065.0
1		0255	36	2.	0.0	2065.2	3		1030	703	0.	0.0	2065.0	5		18051370		0.	0.0	2065.0
1		0300	37	2.	0.0	2065.2	3		1035	704	0.	0.0	2065.0	5		18101371		0.	0.0	2065.0
1		0305	38	2.	0.0	2065.2	3		1040	705	0.	0.0	2065.0	5		18151372		0.	0.0	2065.0
1		0310	39	3.	0.0	2065.2	3		1045	706	0.	0.0	2065.0	5		18201373		0.	0.0	2065.0
1		0315	40	3.	0.1	2065.3	3		1050	707	0.	0.0	2065.0	5		18251374		0.	0.0	2065.0
1		0320	41	3.	0.1	2065.3	3		1055	708	0.	0.0	2065.0	5		18301375		0.	0.0	2065.0
1		0325	42	3.	0.1	2065.3	3		1100	709	0.	0.0	2065.0	5		18351376		0.	0.0	2065.0
1		0330	43	4.	0.1	2065.3	3		1105	710	0.	0.0	2065.0	5		18401377		0.	0.0	2065.0
1		0335	44	4.	0.1	2065.4	3		1110	711	0.	0.0	2065.0	5		18451378		0.	0.0	2065.0
1		0340	45	4.	0.1	2065.4	3		1115	712	0.	0.0	2065.0	5		18501379		0.	0.0	2065.0
1		0345	46	5.	0.1	2065.4	3		1120	713	0.	0.0	2065.0	5		18551380		0.	0.0	2065.0
1		0350	47	5.	0.1	2065.4	3		1125	714	0.	0.0	2065.0	5		19001381		0.	0.0	2065.0
1		0355	48	5.	0.1	2065.5	3		1130	715	0.	0.0	2065.0	5		19051382		0.	0.0	2065.0
1		0400	49	6.	0.1	2065.5	3		1135	716	0.	0.0	2065.0	5		19101383		0.	0.0	2065.0
1		0405	50	6.	0.1	2065.5	3		1140	717	0.	0.0	2065.0	5		19151384		0.	0.0	2065.0
1		0410	51	6.	0.1	2065.5	3		1145	718	0.	0.0	2065.0	5		19201385		0.	0.0	2065.0
1		0415	52	6.	0.1	2065.6	3		1150	719	0.	0.0	2065.0	5		19251386		0.	0.0	2065.0
1		0420	53	7.	0.1	2065.6	3		1155	720	0.	0.0	2065.0	5		19301387		0.	0.0	2065.0
1		0425	54	7.	0.1	2065.6	3		1200	721	0.	0.0	2065.0	5		19351388		0.	0.0	2065.0
1		0430	55	7.	0.1	2065.6	3		1205	722	0.	0.0	2065.0	5		19401389		0.	0.0	2065.0
1		0435	56	7.	0.1	2065.7	3		1210	723	0.	0.0	2065.0	5		19451390		0.	0.0	2065.0
1		0440	57	8.	0.1	2065.7	3		1215	724	0.	0.0	2065.0	5		19501391		0.	0.0	2065.0
1		0445	58	8.	0.1	2065.7	3		1220	725	0.	0.0	2065.0	5		19551392		0.	0.0	2065.0
1		0450	59	8.	0.1	2065.7	3		1225	726	0.	0.0	2065.0	5		20001393		0.	0.0	2065.0
1		0455	60	8.	0.1	2065.7	3		1230	727	0.	0.0	2065.0	5		20051394		0.	0.0	2065.0
1		0500	61	8.	0.1	2065.7	3		1235	728	0.	0.0	2065.0	5		20101395		0.	0.0	2065.0
1		0505	62	9.	0.2	2065.8	3		1240	729	0.	0.0	2065.0	5		20151396		0.	0.0	2065.0
1		0510	63	9.	0.2	2065.8	3		1245	730	0.	0.0	2065.0	5		20201397		0.	0.0	2065.0
1		0515	64	9.	0.2	2065.8	3		1250	731	0.	0.0	2065.0	5		20251398		0.	0.0	2065.0
1		0520	65	9.	0.2	2065.8	3		1255	732	0.	0.0	2065.0	5		20301399		0.	0.0	2065.0
1		0525	66	9.	0.2	2065.8	3		1300	733	0.	0.0	2065.0	5		20351400		0.	0.0	2065.0

1	0530	67	9.	0.2	2065.8	*	3	1305	734	0.	0.0	2065.0	*	5	20401401	0.	0.0	2065.0
1	0535	68	9.	0.2	2065.8	*	3	1310	735	0.	0.0	2065.0	*	5	20451402	0.	0.0	2065.0
1	0540	69	10.	0.2	2065.8	*	3	1315	736	0.	0.0	2065.0	*	5	20501403	0.	0.0	2065.0
1	0545	70	10.	0.2	2065.9	*	3	1320	737	0.	0.0	2065.0	*	5	20551404	0.	0.0	2065.0
1	0550	71	10.	0.2	2065.9	*	3	1325	738	0.	0.0	2065.0	*	5	21001405	0.	0.0	2065.0
1	0555	72	10.	0.2	2065.9	*	3	1330	739	0.	0.0	2065.0	*	5	21051406	0.	0.0	2065.0
1	0600	73	10.	0.2	2065.9	*	3	1335	740	0.	0.0	2065.0	*	5	21101407	0.	0.0	2065.0
1	0605	74	10.	0.2	2065.9	*	3	1340	741	0.	0.0	2065.0	*	5	21151408	0.	0.0	2065.0
1	0610	75	10.	0.2	2065.9	*	3	1345	742	0.	0.0	2065.0	*	5	21201409	0.	0.0	2065.0
1	0615	76	10.	0.2	2065.9	*	3	1350	743	0.	0.0	2065.0	*	5	21251410	0.	0.0	2065.0
1	0620	77	10.	0.2	2065.9	*	3	1355	744	0.	0.0	2065.0	*	5	21301411	0.	0.0	2065.0
1	0625	78	11.	0.2	2065.9	*	3	1400	745	0.	0.0	2065.0	*	5	21351412	0.	0.0	2065.0
1	0630	79	11.	0.2	2065.9	*	3	1405	746	0.	0.0	2065.0	*	5	21401413	0.	0.0	2065.0
1	0635	80	11.	0.2	2066.0	*	3	1410	747	0.	0.0	2065.0	*	5	21451414	0.	0.0	2065.0
1	0640	81	11.	0.2	2066.0	*	3	1415	748	0.	0.0	2065.0	*	5	21501415	0.	0.0	2065.0
1	0645	82	11.	0.2	2066.0	*	3	1420	749	0.	0.0	2065.0	*	5	21551416	0.	0.0	2065.0
1	0650	83	11.	0.2	2066.0	*	3	1425	750	0.	0.0	2065.0	*	5	22001417	0.	0.0	2065.0
1	0655	84	11.	0.2	2066.0	*	3	1430	751	0.	0.0	2065.0	*	5	22051418	0.	0.0	2065.0
1	0700	85	11.	0.2	2066.0	*	3	1435	752	0.	0.0	2065.0	*	5	22101419	0.	0.0	2065.0
1	0705	86	11.	0.2	2066.0	*	3	1440	753	0.	0.0	2065.0	*	5	22151420	0.	0.0	2065.0
1	0710	87	12.	0.2	2066.0	*	3	1445	754	0.	0.0	2065.0	*	5	22201421	0.	0.0	2065.0
1	0715	88	12.	0.2	2066.0	*	3	1450	755	0.	0.0	2065.0	*	5	22251422	0.	0.0	2065.0
1	0720	89	12.	0.2	2066.0	*	3	1455	756	0.	0.0	2065.0	*	5	22301423	0.	0.0	2065.0
1	0725	90	12.	0.2	2066.1	*	3	1500	757	0.	0.0	2065.0	*	5	22351424	0.	0.0	2065.0
1	0730	91	12.	0.2	2066.1	*	3	1505	758	0.	0.0	2065.0	*	5	22401425	0.	0.0	2065.0
1	0735	92	12.	0.2	2066.1	*	3	1510	759	0.	0.0	2065.0	*	5	22451426	0.	0.0	2065.0
1	0740	93	12.	0.3	2066.1	*	3	1515	760	0.	0.0	2065.0	*	5	22501427	0.	0.0	2065.0
1	0745	94	13.	0.3	2066.1	*	3	1520	761	0.	0.0	2065.0	*	5	22551428	0.	0.0	2065.0
1	0750	95	13.	0.3	2066.1	*	3	1525	762	0.	0.0	2065.0	*	5	23001429	0.	0.0	2065.0
1	0755	96	13.	0.3	2066.2	*	3	1530	763	0.	0.0	2065.0	*	5	23051430	0.	0.0	2065.0
1	0800	97	13.	0.3	2066.2	*	3	1535	764	0.	0.0	2065.0	*	5	23101431	0.	0.0	2065.0
1	0805	98	13.	0.3	2066.2	*	3	1540	765	0.	0.0	2065.0	*	5	23151432	0.	0.0	2065.0
1	0810	99	14.	0.3	2066.2	*	3	1545	766	0.	0.0	2065.0	*	5	23201433	0.	0.0	2065.0
1	0815	100	14.	0.3	2066.2	*	3	1550	767	0.	0.0	2065.0	*	5	23251434	0.	0.0	2065.0
1	0820	101	14.	0.3	2066.2	*	3	1555	768	0.	0.0	2065.0	*	5	23301435	0.	0.0	2065.0
1	0825	102	14.	0.3	2066.3	*	3	1600	769	0.	0.0	2065.0	*	5	23351436	0.	0.0	2065.0
1	0830	103	15.	0.3	2066.3	*	3	1605	770	0.	0.0	2065.0	*	5	23401437	0.	0.0	2065.0
1	0835	104	15.	0.4	2066.3	*	3	1610	771	0.	0.0	2065.0	*	5	23451438	0.	0.0	2065.0
1	0840	105	15.	0.4	2066.3	*	3	1615	772	0.	0.0	2065.0	*	5	23501439	0.	0.0	2065.0
1	0845	106	15.	0.4	2066.4	*	3	1620	773	0.	0.0	2065.0	*	5	23551440	0.	0.0	2065.0
1	0850	107	16.	0.4	2066.4	*	3	1625	774	0.	0.0	2065.0	*	6	00001441	0.	0.0	2065.0
1	0855	108	16.	0.4	2066.4	*	3	1630	775	0.	0.0	2065.0	*	6	00051442	0.	0.0	2065.0
1	0900	109	16.	0.4	2066.4	*	3	1635	776	0.	0.0	2065.0	*	6	00101443	0.	0.0	2065.0
1	0905	110	16.	0.4	2066.5	*	3	1640	777	0.	0.0	2065.0	*	6	00151444	0.	0.0	2065.0
1	0910	111	17.	0.4	2066.5	*	3	1645	778	0.	0.0	2065.0	*	6	00201445	0.	0.0	2065.0
1	0915	112	17.	0.5	2066.5	*	3	1650	779	0.	0.0	2065.0	*	6	00251446	0.	0.0	2065.0
1	0920	113	17.	0.5	2066.5	*	3	1655	780	0.	0.0	2065.0	*	6	00301447	0.	0.0	2065.0
1	0925	114	18.	0.5	2066.6	*	3	1700	781	0.	0.0	2065.0	*	6	00351448	0.	0.0	2065.0
1	0930	115	18.	0.5	2066.6	*	3	1705	782	0.	0.0	2065.0	*	6	00401449	0.	0.0	2065.0
1	0935	116	18.	0.5	2066.6	*	3	1710	783	0.	0.0	2065.0	*	6	00451450	0.	0.0	2065.0
1	0940	117	19.	0.5	2066.6	*	3	1715	784	0.	0.0	2065.0	*	6	00501451	0.	0.0	2065.0
1	0945	118	19.	0.5	2066.7	*	3	1720	785	0.	0.0	2065.0	*	6	00551452	0.	0.0	2065.0
1	0950	119	19.	0.6	2066.7	*	3	1725	786	0.	0.0	2065.0	*	6	01001453	0.	0.0	2065.0
1	0955	120	20.	0.6	2066.7	*	3	1730	787	0.	0.0	2065.0	*	6	01051454	0.	0.0	2065.0
1	1000	121	20.	0.6	2066.8	*	3	1735	788	0.	0.0	2065.0	*	6	01101455	0.	0.0	2065.0
1	1005	122	21.	0.6	2066.8	*	3	1740	789	0.	0.0	2065.0	*	6	01151456	0.	0.0	2065.0
1	1010	123	21.	0.6	2066.9	*	3	1745	790	0.	0.0	2065.0	*	6	01201457	0.	0.0	2065.0
1	1015	124	22.	0.6	2066.9	*	3	1750	791	0.	0.0	2065.0	*	6	01251458	0.	0.0	2065.0
1	1020	125	22.	0.7	2066.9	*	3	1755	792	0.	0.0	2065.0	*	6	01301459	0.	0.0	2065.0
1	1025	126	23.	0.7	2067.0	*	3	1800	793	0.	0.0	2065.0	*	6	01351460	0.	0.0	2065.0
1	1030	127	24.	0.7	2067.0	*	3	1805	794	0.	0.0	2065.0	*	6	01401461	0.	0.0	2065.0
1	1035	128	24.	0.7	2067.0	*	3	1810	795	0.	0.0	2065.0	*	6	01451462	0.	0.0	2065.0
1	1040	129	24.	0.8	2067.1	*	3	1815	796	0.	0.0	2065.0	*	6	01501463	0.	0.0	2065.0
1	1045	130	25.	0.8	2067.1	*	3	1820	797	0.	0.0	2065.0	*	6	01551464	0.	0.0	2065.0
1	1050	131	25.	0.9	2067.1	*	3	1825	798	0.	0.0	2065.0	*	6	02001465	0.	0.0	2065.0
1	1055	132	26.	0.9	2067.2	*	3	1830	799	0.	0.0	2065.0	*	6	02051466	0.	0.0	2065.0
1	1100	133	27.	1.0	2067.2	*	3	1835	800	0.	0.0	2065.0	*	6	02101467	0.	0.0	2065.0
1	1105	134	28.	1.0	2067.3	*	3	1840	801	0.	0.0	2065.0	*	6	02151468	0.	0.0	2065.0
1	1110	135	29.	1.1	2067.4	*	3	1845	802	0.	0.0	2065.0	*	6	02201469	0.	0.0	2065.0
1	1115	136	31.	1.2	2067.5	*	3	1850	803	0.	0.0	2065.0	*	6	02251470	0.	0.0	2065.0
1	1120	137	33.	1.4	2067.6	*	3	1855	804	0.	0.0	2065.0	*	6	02301471	0.	0.0	2065.0
1	1125	138	36.	1.5	2067.7	*	3	1900	805	0.	0.0	2065.0	*	6	02351472	0.	0.0	2065.0
1	1130	139	39.	1.7	2067.9	*	3	1905	806	0.	0.0	2065.0	*	6	02401473	0.	0.0	2065.0
1	1135	140	42.	1.9	2068.1	*	3	1910	807	0.	0.0	2065.0	*	6	02451474	0.	0.0	2065.0
1	1140	141	46.	2.2	2068.2	*	3	1915	808	0.	0.0	2065.0	*	6	02501475	0.	0.0	2065.0
1	1145	142	50.	2.5	2068.5	*	3	1920	809	0.	0.0	2065.0	*	6	02551476	0.	0.0	2065.0
1	1150	143	57.	3.1	2068.8	*	3	1925	810	0.	0.0	2065.0	*	6	03001477	0.	0.0	2065.0
1	1155	144	62.	4.0	2069.3	*	3	1930	811	0.	0.0	2065.0	*	6	03051478	0.	0.0	2065.0
1	1200	145	67.	5.8	2070.1	*	3	1935	812	0.	0.0	2065.0	*	6	03101479	0.	0.0	2065.0
1	1205	146	72.	10.1	2070.8	*	3	1940	813	0.	0.0	2065.0	*	6	03151480	0.	0.0	2065.0
1	1210	147	82.	21.7	2072.6	*	3	1945	814	0.	0.0	2065.0	*	6	03201481	0.	0.0	2065.0
1	1215	148	97.	44.8	2075.8	*	3	1950	815	0.	0.0	2065.0	*	6	03251482	0.	0.0	2065.0
1	1220	149	108.	75.4	2078.8	*	3	1955	816	0.	0.0	2065.0	*	6	03301483	0.	0.0	2065.0
1	1225	150	118.	105.6	2081.4	*	3	2000	817	0.	0.0	2065.0	*	6	03351484	0.	0.0	2065.0
1	1230	151	125.	132.3	2083.6	*	3	2005	818	0.	0.0	2065.0	*	6	03401485	0.	0.0	2065.0
1	1235	152	131.	155.3	2085.3	*	3	2010	819	0.	0.0	2065.0	*	6	03451486	0.	0.0	2065.0
1	1240	153	135.	174.8	2086.7	*	3	2015	820	0.	0.0	2065.0	*	6	03501487	0.	0.0	2065.0
1	1245	154	138.	190.7	2087.7	*	3	2020	821	0.	0.0	2065.0	*	6	03551488	0.	0.0	2065.0
1	1250	155	141.	203.6	2088.6	*	3	2025	822	0.	0.0	2065.0	*	6	04001489	0.	0.0	2065.0
1	1255	156	143.	213.9	2089.3	*	3	2030	823	0.	0.0	2065.0	*	6	04051490	0.	0.0	2065.0
1	1300	157	267.	221.8	2089.8	*	3	2035	824	0.	0.0	2065.0	*	6	04101491	0.	0.0	2065.0
1	1305	158	443.	227.2	2090.2	*	3	2040	825	0.	0.0	2065.0	*	6	04151492	0.	0.0	2065.0
1	1310	159	586.	230.3	2090.4	*	3	2045	826	0.	0.0	2065.0	*	6	04201493	0.	0.0	2065.0
1	1315	160	660.	231.7	2090.5	*	3	2050	827	0.	0.0	2065.0	*	6	04251494	0.	0.0	2065.0

1	1320	161	680.	232.1	2090.5	*	3	2055	828	0.	0.0	2065.0	*	6	04301495	0.	0.0	2065.0
1	1325	162	669.	231.9	2090.5	*	3	2100	829	0.	0.0	2065.0	*	6	04351496	0.	0.0	2065.0
1	1330	163	640.	231.3	2090.4	*	3	2105	830	0.	0.0	2065.0	*	6	04401497	0.	0.0	2065.0
1	1335	164	605.	230.7	2090.4	*	3	2110	831	0.	0.0	2065.0	*	6	04451498	0.	0.0	2065.0
1	1340	165	570.	230.0	2090.4	*	3	2115	832	0.	0.0	2065.0	*	6	04501499	0.	0.0	2065.0
1	1345	166	536.	229.2	2090.3	*	3	2120	833	0.	0.0	2065.0	*	6	04551500	0.	0.0	2065.0
1	1350	167	502.	228.5	2090.3	*	3	2125	834	0.	0.0	2065.0	*	6	05001501	0.	0.0	2065.0
1	1355	168	471.	227.8	2090.2	*	3	2130	835	0.	0.0	2065.0	*	6	05051502	0.	0.0	2065.0
1	1400	169	444.	227.2	2090.2	*	3	2135	836	0.	0.0	2065.0	*	6	05101503	0.	0.0	2065.0
1	1405	170	422.	226.7	2090.2	*	3	2140	837	0.	0.0	2065.0	*	6	05151504	0.	0.0	2065.0
1	1410	171	401.	226.1	2090.1	*	3	2145	838	0.	0.0	2065.0	*	6	05201505	0.	0.0	2065.0
1	1415	172	381.	225.6	2090.1	*	3	2150	839	0.	0.0	2065.0	*	6	05251506	0.	0.0	2065.0
1	1420	173	363.	225.2	2090.1	*	3	2155	840	0.	0.0	2065.0	*	6	05301507	0.	0.0	2065.0
1	1425	174	346.	224.8	2090.0	*	3	2200	841	0.	0.0	2065.0	*	6	05351508	0.	0.0	2065.0
1	1430	175	330.	224.4	2090.0	*	3	2205	842	0.	0.0	2065.0	*	6	05401509	0.	0.0	2065.0
1	1435	176	320.	224.0	2090.0	*	3	2210	843	0.	0.0	2065.0	*	6	05451510	0.	0.0	2065.0
1	1440	177	310.	223.6	2090.0	*	3	2215	844	0.	0.0	2065.0	*	6	05501511	0.	0.0	2065.0
1	1445	178	301.	223.2	2089.9	*	3	2220	845	0.	0.0	2065.0	*	6	05551512	0.	0.0	2065.0
1	1450	179	291.	222.8	2089.9	*	3	2225	846	0.	0.0	2065.0	*	6	06001513	0.	0.0	2065.0
1	1455	180	282.	222.5	2089.9	*	3	2230	847	0.	0.0	2065.0	*	6	06051514	0.	0.0	2065.0
1	1500	181	273.	222.1	2089.9	*	3	2235	848	0.	0.0	2065.0	*	6	06101515	0.	0.0	2065.0
1	1505	182	265.	221.8	2089.8	*	3	2240	849	0.	0.0	2065.0	*	6	06151516	0.	0.0	2065.0
1	1510	183	257.	221.4	2089.8	*	3	2245	850	0.	0.0	2065.0	*	6	06201517	0.	0.0	2065.0
1	1515	184	249.	221.1	2089.8	*	3	2250	851	0.	0.0	2065.0	*	6	06251518	0.	0.0	2065.0
1	1520	185	242.	220.8	2089.8	*	3	2255	852	0.	0.0	2065.0	*	6	06301519	0.	0.0	2065.0
1	1525	186	235.	220.6	2089.7	*	3	2300	853	0.	0.0	2065.0	*	6	06351520	0.	0.0	2065.0
1	1530	187	228.	220.3	2089.7	*	3	2305	854	0.	0.0	2065.0	*	6	06401521	0.	0.0	2065.0
1	1535	188	222.	220.0	2089.7	*	3	2310	855	0.	0.0	2065.0	*	6	06451522	0.	0.0	2065.0
1	1540	189	216.	219.8	2089.7	*	3	2315	856	0.	0.0	2065.0	*	6	06501523	0.	0.0	2065.0
1	1545	190	210.	219.6	2089.7	*	3	2320	857	0.	0.0	2065.0	*	6	06551524	0.	0.0	2065.0
1	1550	191	205.	219.4	2089.7	*	3	2325	858	0.	0.0	2065.0	*	6	07001525	0.	0.0	2065.0
1	1555	192	200.	219.2	2089.7	*	3	2330	859	0.	0.0	2065.0	*	6	07051526	0.	0.0	2065.0
1	1600	193	195.	219.0	2089.6	*	3	2335	860	0.	0.0	2065.0	*	6	07101527	0.	0.0	2065.0
1	1605	194	191.	218.8	2089.6	*	3	2340	861	0.	0.0	2065.0	*	6	07151528	0.	0.0	2065.0
1	1610	195	187.	218.6	2089.6	*	3	2345	862	0.	0.0	2065.0	*	6	07201529	0.	0.0	2065.0
1	1615	196	183.	218.5	2089.6	*	3	2350	863	0.	0.0	2065.0	*	6	07251530	0.	0.0	2065.0
1	1620	197	179.	218.3	2089.6	*	3	2355	864	0.	0.0	2065.0	*	6	07301531	0.	0.0	2065.0
1	1625	198	175.	218.2	2089.6	*	4	0000	865	0.	0.0	2065.0	*	6	07351532	0.	0.0	2065.0
1	1630	199	172.	218.0	2089.6	*	4	0005	866	0.	0.0	2065.0	*	6	07401533	0.	0.0	2065.0
1	1635	200	169.	217.9	2089.6	*	4	0010	867	0.	0.0	2065.0	*	6	07451534	0.	0.0	2065.0
1	1640	201	165.	217.8	2089.6	*	4	0015	868	0.	0.0	2065.0	*	6	07501535	0.	0.0	2065.0
1	1645	202	162.	217.6	2089.6	*	4	0020	869	0.	0.0	2065.0	*	6	07551536	0.	0.0	2065.0
1	1650	203	159.	217.5	2089.5	*	4	0025	870	0.	0.0	2065.0	*	6	08001537	0.	0.0	2065.0
1	1655	204	156.	217.4	2089.5	*	4	0030	871	0.	0.0	2065.0	*	6	08051538	0.	0.0	2065.0
1	1700	205	154.	217.3	2089.5	*	4	0035	872	0.	0.0	2065.0	*	6	08101539	0.	0.0	2065.0
1	1705	206	151.	217.2	2089.5	*	4	0040	873	0.	0.0	2065.0	*	6	08151540	0.	0.0	2065.0
1	1710	207	148.	217.1	2089.5	*	4	0045	874	0.	0.0	2065.0	*	6	08201541	0.	0.0	2065.0
1	1715	208	146.	217.0	2089.5	*	4	0050	875	0.	0.0	2065.0	*	6	08251542	0.	0.0	2065.0
1	1720	209	144.	216.9	2089.5	*	4	0055	876	0.	0.0	2065.0	*	6	08301543	0.	0.0	2065.0
1	1725	210	144.	216.8	2089.5	*	4	0100	877	0.	0.0	2065.0	*	6	08351544	0.	0.0	2065.0
1	1730	211	144.	216.7	2089.5	*	4	0105	878	0.	0.0	2065.0	*	6	08401545	0.	0.0	2065.0
1	1735	212	144.	216.5	2089.5	*	4	0110	879	0.	0.0	2065.0	*	6	08451546	0.	0.0	2065.0
1	1740	213	144.	216.4	2089.5	*	4	0115	880	0.	0.0	2065.0	*	6	08501547	0.	0.0	2065.0
1	1745	214	143.	216.3	2089.5	*	4	0120	881	0.	0.0	2065.0	*	6	08551548	0.	0.0	2065.0
1	1750	215	143.	216.1	2089.4	*	4	0125	882	0.	0.0	2065.0	*	6	09001549	0.	0.0	2065.0
1	1755	216	143.	215.9	2089.4	*	4	0130	883	0.	0.0	2065.0	*	6	09051550	0.	0.0	2065.0
1	1800	217	143.	215.7	2089.4	*	4	0135	884	0.	0.0	2065.0	*	6	09101551	0.	0.0	2065.0
1	1805	218	143.	215.6	2089.4	*	4	0140	885	0.	0.0	2065.0	*	6	09151552	0.	0.0	2065.0
1	1810	219	143.	215.4	2089.4	*	4	0145	886	0.	0.0	2065.0	*	6	09201553	0.	0.0	2065.0
1	1815	220	143.	215.1	2089.4	*	4	0150	887	0.	0.0	2065.0	*	6	09251554	0.	0.0	2065.0
1	1820	221	143.	214.9	2089.4	*	4	0155	888	0.	0.0	2065.0	*	6	09301555	0.	0.0	2065.0
1	1825	222	143.	214.7	2089.4	*	4	0200	889	0.	0.0	2065.0	*	6	09351556	0.	0.0	2065.0
1	1830	223	143.	214.4	2089.3	*	4	0205	890	0.	0.0	2065.0	*	6	09401557	0.	0.0	2065.0
1	1835	224	143.	214.2	2089.3	*	4	0210	891	0.	0.0	2065.0	*	6	09451558	0.	0.0	2065.0
1	1840	225	143.	213.9	2089.3	*	4	0215	892	0.	0.0	2065.0	*	6	09501559	0.	0.0	2065.0
1	1845	226	143.	213.6	2089.3	*	4	0220	893	0.	0.0	2065.0	*	6	09551560	0.	0.0	2065.0
1	1850	227	143.	213.3	2089.3	*	4	0225	894	0.	0.0	2065.0	*	6	10001561	0.	0.0	2065.0
1	1855	228	143.	213.0	2089.2	*	4	0230	895	0.	0.0	2065.0	*	6	10051562	0.	0.0	2065.0
1	1900	229	143.	212.7	2089.2	*	4	0235	896	0.	0.0	2065.0	*	6	10101563	0.	0.0	2065.0
1	1905	230	143.	212.4	2089.2	*	4	0240	897	0.	0.0	2065.0	*	6	10151564	0.	0.0	2065.0
1	1910	231	143.	212.1	2089.2	*	4	0245	898	0.	0.0	2065.0	*	6	10201565	0.	0.0	2065.0
1	1915	232	143.	211.7	2089.2	*	4	0250	899	0.	0.0	2065.0	*	6	10251566	0.	0.0	2065.0
1	1920	233	143.	211.3	2089.1	*	4	0255	900	0.	0.0	2065.0	*	6	10301567	0.	0.0	2065.0
1	1925	234	142.	211.0	2089.1	*	4	0300	901	0.	0.0	2065.0	*	6	10351568	0.	0.0	2065.0
1	1930	235	142.	210.6	2089.1	*	4	0305	902	0.	0.0	2065.0	*	6	10401569	0.	0.0	2065.0
1	1935	236	142.	210.2	2089.0	*	4	0310	903	0.	0.0	2065.0	*	6	10451570	0.	0.0	2065.0
1	1940	237	142.	209.8	2089.0	*	4	0315	904	0.	0.0	2065.0	*	6	10501571	0.	0.0	2065.0
1	1945	238	142.	209.4	2089.0	*	4	0320	905	0.	0.0	2065.0	*	6	10551572	0.	0.0	2065.0
1	1950	239	142.	209.0	2089.0	*	4	0325	906	0.	0.0	2065.0	*	6	11001573	0.	0.0	2065.0
1	1955	240	142.	208.6	2088.9	*	4	0330	907	0.	0.0	2065.0	*	6	11051574	0.	0.0	2065.0
1	2000	241	142.	208.2	2088.9	*	4	0335	908	0.	0.0	2065.0	*	6	11101575	0.	0.0	2065.0
1	2005	242	142.	207.7	2088.9	*	4	0340	909	0.	0.0	2065.0	*	6	11151576	0.	0.0	2065.0
1	2010	243	142.	207.3	2088.9	*	4	0345	910	0.	0.0	2065.0	*	6	11201577	0.	0.0	2065.0
1	2015	244	142.	206.9	2088.8	*	4	0350	911	0.	0.0	2065.0	*	6	11251578	0.	0.0	2065.0
1	2020	245	142.	206.4	2088.8	*	4	0355	912	0.	0.0	2065.0	*	6	11301579	0.	0.0	2065.0
1	2025	246	141.	206.0	2088.8	*	4	0400	913	0.	0.0	2065.0	*	6	11351580	0.	0.0	2065.0
1	2030	247	141.	205.5	2088.7	*	4	0405	914	0.	0.0	2065.0	*	6	11401581	0.	0.0	2065.0
1	2035	248	141.	205.1	2088.7	*	4	0410	915	0.	0.0	2065.0	*	6	11451582	0.	0.0	2065.0
1	2040	249	141.	204.6	2088.7	*	4	0415	916	0.	0.0	2065.0	*	6	11501583	0.	0.0	2065.0
1	2045	250	141.	204.2	2088.6	*	4	0420	917	0.	0.0	2065.0	*	6	11551584	0.	0.0	2065.0
1	2050	251	141.	203.7	2088.6	*	4	0425	918	0.	0.0	2065.0	*	6	12001585	0.	0.0	2065.0
1	2055	252	141.	203.2	2088.6	*	4	0430	919	0.	0.0	2065.0	*	6	12051586	0.	0.0	2065.0
1	2100	253	141.	202.7	2088.5	*	4	0435	920	0.	0.0	2065.0	*	6	12101587	0.	0.0	2065.0
1	2105	254	141.	202.3	2088.5	*	4	0440	921	0.	0.0	2065.0	*	6	12151588	0.	0.0	2065.0

1	2110	255	141.	201.8	2088.5	*	4	0445	922	0.	0.0	2065.0	*	6	12201589	0.	0.0	2065.0
1	2115	256	141.	201.3	2088.4	*	4	0450	923	0.	0.0	2065.0	*	6	12251590	0.	0.0	2065.0
1	2120	257	140.	200.8	2088.4	*	4	0455	924	0.	0.0	2065.0	*	6	12301591	0.	0.0	2065.0
1	2125	258	140.	200.3	2088.4	*	4	0500	925	0.	0.0	2065.0	*	6	12351592	0.	0.0	2065.0
1	2130	259	140.	199.8	2088.3	*	4	0505	926	0.	0.0	2065.0	*	6	12401593	0.	0.0	2065.0
1	2135	260	140.	199.3	2088.3	*	4	0510	927	0.	0.0	2065.0	*	6	12451594	0.	0.0	2065.0
1	2140	261	140.	198.8	2088.3	*	4	0515	928	0.	0.0	2065.0	*	6	12501595	0.	0.0	2065.0
1	2145	262	140.	198.3	2088.2	*	4	0520	929	0.	0.0	2065.0	*	6	12551596	0.	0.0	2065.0
1	2150	263	140.	197.8	2088.2	*	4	0525	930	0.	0.0	2065.0	*	6	13001597	0.	0.0	2065.0
1	2155	264	140.	197.3	2088.2	*	4	0530	931	0.	0.0	2065.0	*	6	13051598	0.	0.0	2065.0
1	2200	265	140.	196.8	2088.1	*	4	0535	932	0.	0.0	2065.0	*	6	13101599	0.	0.0	2065.0
1	2205	266	140.	196.3	2088.1	*	4	0540	933	0.	0.0	2065.0	*	6	13151600	0.	0.0	2065.0
1	2210	267	139.	195.8	2088.1	*	4	0545	934	0.	0.0	2065.0	*	6	13201601	0.	0.0	2065.0
1	2215	268	139.	195.2	2088.0	*	4	0550	935	0.	0.0	2065.0	*	6	13251602	0.	0.0	2065.0
1	2220	269	139.	194.7	2088.0	*	4	0555	936	0.	0.0	2065.0	*	6	13301603	0.	0.0	2065.0
1	2225	270	139.	194.2	2088.0	*	4	0600	937	0.	0.0	2065.0	*	6	13351604	0.	0.0	2065.0
1	2230	271	139.	193.7	2087.9	*	4	0605	938	0.	0.0	2065.0	*	6	13401605	0.	0.0	2065.0
1	2235	272	139.	193.1	2087.9	*	4	0610	939	0.	0.0	2065.0	*	6	13451606	0.	0.0	2065.0
1	2240	273	139.	192.6	2087.9	*	4	0615	940	0.	0.0	2065.0	*	6	13501607	0.	0.0	2065.0
1	2245	274	139.	192.1	2087.8	*	4	0620	941	0.	0.0	2065.0	*	6	13551608	0.	0.0	2065.0
1	2250	275	139.	191.5	2087.8	*	4	0625	942	0.	0.0	2065.0	*	6	14001609	0.	0.0	2065.0
1	2255	276	138.	191.0	2087.8	*	4	0630	943	0.	0.0	2065.0	*	6	14051610	0.	0.0	2065.0
1	2300	277	138.	190.4	2087.7	*	4	0635	944	0.	0.0	2065.0	*	6	14101611	0.	0.0	2065.0
1	2305	278	138.	189.9	2087.7	*	4	0640	945	0.	0.0	2065.0	*	6	14151612	0.	0.0	2065.0
1	2310	279	138.	189.4	2087.6	*	4	0645	946	0.	0.0	2065.0	*	6	14201613	0.	0.0	2065.0
1	2315	280	138.	188.8	2087.6	*	4	0650	947	0.	0.0	2065.0	*	6	14251614	0.	0.0	2065.0
1	2320	281	138.	188.3	2087.6	*	4	0655	948	0.	0.0	2065.0	*	6	14301615	0.	0.0	2065.0
1	2325	282	138.	187.7	2087.5	*	4	0700	949	0.	0.0	2065.0	*	6	14351616	0.	0.0	2065.0
1	2330	283	138.	187.2	2087.5	*	4	0705	950	0.	0.0	2065.0	*	6	14401617	0.	0.0	2065.0
1	2335	284	138.	186.6	2087.5	*	4	0710	951	0.	0.0	2065.0	*	6	14451618	0.	0.0	2065.0
1	2340	285	137.	186.1	2087.4	*	4	0715	952	0.	0.0	2065.0	*	6	14501619	0.	0.0	2065.0
1	2345	286	137.	185.5	2087.4	*	4	0720	953	0.	0.0	2065.0	*	6	14551620	0.	0.0	2065.0
1	2350	287	137.	184.9	2087.3	*	4	0725	954	0.	0.0	2065.0	*	6	15001621	0.	0.0	2065.0
1	2355	288	137.	184.4	2087.3	*	4	0730	955	0.	0.0	2065.0	*	6	15051622	0.	0.0	2065.0
2	0000	289	137.	183.8	2087.3	*	4	0735	956	0.	0.0	2065.0	*	6	15101623	0.	0.0	2065.0
2	0005	290	137.	183.2	2087.2	*	4	0740	957	0.	0.0	2065.0	*	6	15151624	0.	0.0	2065.0
2	0010	291	137.	182.7	2087.2	*	4	0745	958	0.	0.0	2065.0	*	6	15201625	0.	0.0	2065.0
2	0015	292	137.	182.1	2087.2	*	4	0750	959	0.	0.0	2065.0	*	6	15251626	0.	0.0	2065.0
2	0020	293	137.	181.5	2087.1	*	4	0755	960	0.	0.0	2065.0	*	6	15301627	0.	0.0	2065.0
2	0025	294	136.	180.9	2087.1	*	4	0800	961	0.	0.0	2065.0	*	6	15351628	0.	0.0	2065.0
2	0030	295	136.	180.4	2087.0	*	4	0805	962	0.	0.0	2065.0	*	6	15401629	0.	0.0	2065.0
2	0035	296	136.	179.8	2087.0	*	4	0810	963	0.	0.0	2065.0	*	6	15451630	0.	0.0	2065.0
2	0040	297	136.	179.1	2087.0	*	4	0815	964	0.	0.0	2065.0	*	6	15501631	0.	0.0	2065.0
2	0045	298	136.	178.5	2086.9	*	4	0820	965	0.	0.0	2065.0	*	6	15551632	0.	0.0	2065.0
2	0050	299	136.	177.9	2086.9	*	4	0825	966	0.	0.0	2065.0	*	6	16001633	0.	0.0	2065.0
2	0055	300	136.	177.2	2086.8	*	4	0830	967	0.	0.0	2065.0	*	6	16051634	0.	0.0	2065.0
2	0100	301	136.	176.6	2086.8	*	4	0835	968	0.	0.0	2065.0	*	6	16101635	0.	0.0	2065.0
2	0105	302	135.	175.9	2086.7	*	4	0840	969	0.	0.0	2065.0	*	6	16151636	0.	0.0	2065.0
2	0110	303	135.	175.2	2086.7	*	4	0845	970	0.	0.0	2065.0	*	6	16201637	0.	0.0	2065.0
2	0115	304	135.	174.5	2086.6	*	4	0850	971	0.	0.0	2065.0	*	6	16251638	0.	0.0	2065.0
2	0120	305	135.	173.8	2086.6	*	4	0855	972	0.	0.0	2065.0	*	6	16301639	0.	0.0	2065.0
2	0125	306	135.	173.0	2086.5	*	4	0900	973	0.	0.0	2065.0	*	6	16351640	0.	0.0	2065.0
2	0130	307	135.	172.3	2086.5	*	4	0905	974	0.	0.0	2065.0	*	6	16401641	0.	0.0	2065.0
2	0135	308	134.	171.5	2086.4	*	4	0910	975	0.	0.0	2065.0	*	6	16451642	0.	0.0	2065.0
2	0140	309	134.	170.7	2086.4	*	4	0915	976	0.	0.0	2065.0	*	6	16501643	0.	0.0	2065.0
2	0145	310	134.	170.0	2086.3	*	4	0920	977	0.	0.0	2065.0	*	6	16551644	0.	0.0	2065.0
2	0150	311	134.	169.2	2086.3	*	4	0925	978	0.	0.0	2065.0	*	6	17001645	0.	0.0	2065.0
2	0155	312	134.	168.4	2086.2	*	4	0930	979	0.	0.0	2065.0	*	6	17051646	0.	0.0	2065.0
2	0200	313	134.	167.6	2086.2	*	4	0935	980	0.	0.0	2065.0	*	6	17101647	0.	0.0	2065.0
2	0205	314	133.	166.8	2086.1	*	4	0940	981	0.	0.0	2065.0	*	6	17151648	0.	0.0	2065.0
2	0210	315	133.	166.0	2086.1	*	4	0945	982	0.	0.0	2065.0	*	6	17201649	0.	0.0	2065.0
2	0215	316	133.	165.1	2086.0	*	4	0950	983	0.	0.0	2065.0	*	6	17251650	0.	0.0	2065.0
2	0220	317	133.	164.3	2086.0	*	4	0955	984	0.	0.0	2065.0	*	6	17301651	0.	0.0	2065.0
2	0225	318	133.	163.5	2085.9	*	4	1000	985	0.	0.0	2065.0	*	6	17351652	0.	0.0	2065.0
2	0230	319	133.	162.7	2085.8	*	4	1005	986	0.	0.0	2065.0	*	6	17401653	0.	0.0	2065.0
2	0235	320	132.	161.8	2085.8	*	4	1010	987	0.	0.0	2065.0	*	6	17451654	0.	0.0	2065.0
2	0240	321	132.	161.0	2085.7	*	4	1015	988	0.	0.0	2065.0	*	6	17501655	0.	0.0	2065.0
2	0245	322	132.	160.2	2085.7	*	4	1020	989	0.	0.0	2065.0	*	6	17551656	0.	0.0	2065.0
2	0250	323	132.	159.3	2085.6	*	4	1025	990	0.	0.0	2065.0	*	6	18001657	0.	0.0	2065.0
2	0255	324	132.	158.5	2085.6	*	4	1030	991	0.	0.0	2065.0	*	6	18051658	0.	0.0	2065.0
2	0300	325	132.	157.6	2085.5	*	4	1035	992	0.	0.0	2065.0	*	6	18101659	0.	0.0	2065.0
2	0305	326	131.	156.8	2085.4	*	4	1040	993	0.	0.0	2065.0	*	6	18151660	0.	0.0	2065.0
2	0310	327	131.	155.9	2085.4	*	4	1045	994	0.	0.0	2065.0	*	6	18201661	0.	0.0	2065.0
2	0315	328	131.	155.1	2085.3	*	4	1050	995	0.	0.0	2065.0	*	6	18251662	0.	0.0	2065.0
2	0320	329	131.	154.2	2085.3	*	4	1055	996	0.	0.0	2065.0	*	6	18301663	0.	0.0	2065.0
2	0325	330	131.	153.4	2085.2	*	4	1100	997	0.	0.0	2065.0	*	6	18351664	0.	0.0	2065.0
2	0330	331	131.	152.5	2085.2	*	4	1105	998	0.	0.0	2065.0	*	6	18401665	0.	0.0	2065.0
2	0335	332	130.	151.6	2085.1	*	4	1110	999	0.	0.0	2065.0	*	6	18451666	0.	0.0	2065.0
2	0340	333	130.	150.8	2085.0	*	4	11151000		0.	0.0	2065.0	*	6	18501667	0.	0.0	2065.0
2	0345	334	130.	149.9	2085.0	*	4	11201001		0.	0.0	2065.0	*	6	18551668	0.	0.0	2065.0
2	0350	335	130.	149.1	2084.9	*	4	11251002		0.	0.0	2065.0	*	6	19001669	0.	0.0	2065.0
2	0355	336	130.	148.2	2084.8	*	4	11301003		0.	0.0	2065.0	*	6	19051670	0.	0.0	2065.0
2	0400	337	129.	147.3	2084.8	*	4	11351004		0.	0.0	2065.0	*	6	19101671	0.	0.0	2065.0
2	0405	338	129.	146.5	2084.7	*	4	11401005		0.	0.0	2065.0	*	6	19151672	0.	0.0	2065.0
2	0410	339	129.	145.6	2084.6	*	4	11451006		0.	0.0	2065.0	*	6	19201673	0.	0.0	2065.0
2	0415	340	129.	144.7	2084.6	*	4	11501007		0.	0.0	2065.0	*	6	19251674	0.	0.0	2065.0
2	0420	341	128.	143.9	2084.5	*	4	11551008		0.	0.0	2065.0	*	6	19301675	0.	0.0	2065.0
2	0425	342	128.	143.0	2084.4	*	4	12001009		0.	0.0	2065.0	*	6	19351676	0.	0.0	2065.0
2	0430	343	128.	142.2	2084.4	*	4	12051010		0.	0.0	2065.0	*	6	19401677	0.	0.0	2065.0
2	0435	344	128.	141.3	2084.3	*	4	12101011		0.	0.0	2065.0	*	6	19451678	0.	0.0	2065.0
2	0440	345	128.	140.4	2084.2	*	4	12151012		0.	0.0	2065.0	*	6	19501679	0.	0.0	2065.0
2	0445	346	127.	139.6	2084.1	*	4	12201013		0.	0.0	2065.0	*	6	19551680	0.	0.0	2065.0
2	0450	347	127.	138.7	2084.1	*	4	12251014		0.	0.0	2065.0	*	6	20001681	0.	0.0	2065.0
2	0455	348	127.	137.9	2084.0	*	4	12301015		0.	0.0	2065.0	*	6	20051682	0.	0.0	2065.0

2	0500	349	127.	137.0	2083.9	*	4	12351016	0.	0.0	2065.0	*	6	20101683	0.	0.0	2065.0
2	0505	350	126.	136.1	2083.9	*	4	12401017	0.	0.0	2065.0	*	6	20151684	0.	0.0	2065.0
2	0510	351	126.	135.3	2083.8	*	4	12451018	0.	0.0	2065.0	*	6	20201685	0.	0.0	2065.0
2	0515	352	126.	134.4	2083.7	*	4	12501019	0.	0.0	2065.0	*	6	20251686	0.	0.0	2065.0
2	0520	353	126.	133.6	2083.7	*	4	12551020	0.	0.0	2065.0	*	6	20301687	0.	0.0	2065.0
2	0525	354	125.	132.7	2083.6	*	4	13001021	0.	0.0	2065.0	*	6	20351688	0.	0.0	2065.0
2	0530	355	125.	131.9	2083.5	*	4	13051022	0.	0.0	2065.0	*	6	20401689	0.	0.0	2065.0
2	0535	356	125.	131.0	2083.5	*	4	13101023	0.	0.0	2065.0	*	6	20451690	0.	0.0	2065.0
2	0540	357	125.	130.2	2083.4	*	4	13151024	0.	0.0	2065.0	*	6	20501691	0.	0.0	2065.0
2	0545	358	125.	129.3	2083.3	*	4	13201025	0.	0.0	2065.0	*	6	20551692	0.	0.0	2065.0
2	0550	359	124.	128.5	2083.3	*	4	13251026	0.	0.0	2065.0	*	6	21001693	0.	0.0	2065.0
2	0555	360	124.	127.6	2083.2	*	4	13301027	0.	0.0	2065.0	*	6	21051694	0.	0.0	2065.0
2	0600	361	124.	126.8	2083.1	*	4	13351028	0.	0.0	2065.0	*	6	21101695	0.	0.0	2065.0
2	0605	362	124.	125.9	2083.0	*	4	13401029	0.	0.0	2065.0	*	6	21151696	0.	0.0	2065.0
2	0610	363	124.	125.1	2083.0	*	4	13451030	0.	0.0	2065.0	*	6	21201697	0.	0.0	2065.0
2	0615	364	123.	124.2	2082.9	*	4	13501031	0.	0.0	2065.0	*	6	21251698	0.	0.0	2065.0
2	0620	365	123.	123.4	2082.8	*	4	13551032	0.	0.0	2065.0	*	6	21301699	0.	0.0	2065.0
2	0625	366	123.	122.6	2082.8	*	4	14001033	0.	0.0	2065.0	*	6	21351700	0.	0.0	2065.0
2	0630	367	123.	121.7	2082.7	*	4	14051034	0.	0.0	2065.0	*	6	21401701	0.	0.0	2065.0
2	0635	368	122.	120.9	2082.6	*	4	14101035	0.	0.0	2065.0	*	6	21451702	0.	0.0	2065.0
2	0640	369	122.	120.1	2082.6	*	4	14151036	0.	0.0	2065.0	*	6	21501703	0.	0.0	2065.0
2	0645	370	122.	119.2	2082.5	*	4	14201037	0.	0.0	2065.0	*	6	21551704	0.	0.0	2065.0
2	0650	371	122.	118.4	2082.4	*	4	14251038	0.	0.0	2065.0	*	6	22001705	0.	0.0	2065.0
2	0655	372	122.	117.6	2082.4	*	4	14301039	0.	0.0	2065.0	*	6	22051706	0.	0.0	2065.0
2	0700	373	121.	116.7	2082.3	*	4	14351040	0.	0.0	2065.0	*	6	22101707	0.	0.0	2065.0
2	0705	374	121.	115.9	2082.2	*	4	14401041	0.	0.0	2065.0	*	6	22151708	0.	0.0	2065.0
2	0710	375	121.	115.1	2082.2	*	4	14451042	0.	0.0	2065.0	*	6	22201709	0.	0.0	2065.0
2	0715	376	121.	114.2	2082.1	*	4	14501043	0.	0.0	2065.0	*	6	22251710	0.	0.0	2065.0
2	0720	377	120.	113.4	2082.0	*	4	14551044	0.	0.0	2065.0	*	6	22301711	0.	0.0	2065.0
2	0725	378	120.	112.6	2082.0	*	4	15001045	0.	0.0	2065.0	*	6	22351712	0.	0.0	2065.0
2	0730	379	120.	111.8	2081.9	*	4	15051046	0.	0.0	2065.0	*	6	22401713	0.	0.0	2065.0
2	0735	380	120.	110.9	2081.8	*	4	15101047	0.	0.0	2065.0	*	6	22451714	0.	0.0	2065.0
2	0740	381	120.	110.1	2081.8	*	4	15151048	0.	0.0	2065.0	*	6	22501715	0.	0.0	2065.0
2	0745	382	119.	109.3	2081.7	*	4	15201049	0.	0.0	2065.0	*	6	22551716	0.	0.0	2065.0
2	0750	383	119.	108.5	2081.6	*	4	15251050	0.	0.0	2065.0	*	6	23001717	0.	0.0	2065.0
2	0755	384	119.	107.7	2081.6	*	4	15301051	0.	0.0	2065.0	*	6	23051718	0.	0.0	2065.0
2	0800	385	119.	106.9	2081.5	*	4	15351052	0.	0.0	2065.0	*	6	23101719	0.	0.0	2065.0
2	0805	386	118.	106.1	2081.4	*	4	15401053	0.	0.0	2065.0	*	6	23151720	0.	0.0	2065.0
2	0810	387	118.	105.2	2081.4	*	4	15451054	0.	0.0	2065.0	*	6	23201721	0.	0.0	2065.0
2	0815	388	118.	104.4	2081.3	*	4	15501055	0.	0.0	2065.0	*	6	23251722	0.	0.0	2065.0
2	0820	389	118.	103.6	2081.2	*	4	15551056	0.	0.0	2065.0	*	6	23301723	0.	0.0	2065.0
2	0825	390	117.	102.8	2081.2	*	4	16001057	0.	0.0	2065.0	*	6	23351724	0.	0.0	2065.0
2	0830	391	117.	102.0	2081.1	*	4	16051058	0.	0.0	2065.0	*	6	23401725	0.	0.0	2065.0
2	0835	392	117.	101.2	2081.1	*	4	16101059	0.	0.0	2065.0	*	6	23451726	0.	0.0	2065.0
2	0840	393	117.	100.4	2081.0	*	4	16151060	0.	0.0	2065.0	*	6	23501727	0.	0.0	2065.0
2	0845	394	116.	99.6	2080.9	*	4	16201061	0.	0.0	2065.0	*	6	23551728	0.	0.0	2065.0
2	0850	395	116.	98.8	2080.9	*	4	16251062	0.	0.0	2065.0	*	7	00001729	0.	0.0	2065.0
2	0855	396	116.	98.0	2080.8	*	4	16301063	0.	0.0	2065.0	*	7	00051730	0.	0.0	2065.0
2	0900	397	116.	97.2	2080.7	*	4	16351064	0.	0.0	2065.0	*	7	00101731	0.	0.0	2065.0
2	0905	398	116.	96.4	2080.7	*	4	16401065	0.	0.0	2065.0	*	7	00151732	0.	0.0	2065.0
2	0910	399	115.	95.6	2080.6	*	4	16451066	0.	0.0	2065.0	*	7	00201733	0.	0.0	2065.0
2	0915	400	115.	94.8	2080.5	*	4	16501067	0.	0.0	2065.0	*	7	00251734	0.	0.0	2065.0
2	0920	401	115.	94.1	2080.5	*	4	16551068	0.	0.0	2065.0	*	7	00301735	0.	0.0	2065.0
2	0925	402	115.	93.3	2080.4	*	4	17001069	0.	0.0	2065.0	*	7	00351736	0.	0.0	2065.0
2	0930	403	114.	92.5	2080.4	*	4	17051070	0.	0.0	2065.0	*	7	00401737	0.	0.0	2065.0
2	0935	404	114.	91.7	2080.3	*	4	17101071	0.	0.0	2065.0	*	7	00451738	0.	0.0	2065.0
2	0940	405	114.	90.9	2080.2	*	4	17151072	0.	0.0	2065.0	*	7	00501739	0.	0.0	2065.0
2	0945	406	114.	90.1	2080.2	*	4	17201073	0.	0.0	2065.0	*	7	00551740	0.	0.0	2065.0
2	0950	407	113.	89.4	2080.1	*	4	17251074	0.	0.0	2065.0	*	7	01001741	0.	0.0	2065.0
2	0955	408	113.	88.6	2080.0	*	4	17301075	0.	0.0	2065.0	*	7	01051742	0.	0.0	2065.0
2	1000	409	113.	87.8	2080.0	*	4	17351076	0.	0.0	2065.0	*	7	01101743	0.	0.0	2065.0
2	1005	410	113.	87.0	2079.9	*	4	17401077	0.	0.0	2065.0	*	7	01151744	0.	0.0	2065.0
2	1010	411	112.	86.2	2079.8	*	4	17451078	0.	0.0	2065.0	*	7	01201745	0.	0.0	2065.0
2	1015	412	112.	85.5	2079.7	*	4	17501079	0.	0.0	2065.0	*	7	01251746	0.	0.0	2065.0
2	1020	413	112.	84.7	2079.7	*	4	17551080	0.	0.0	2065.0	*	7	01301747	0.	0.0	2065.0
2	1025	414	112.	83.9	2079.6	*	4	18001081	0.	0.0	2065.0	*	7	01351748	0.	0.0	2065.0
2	1030	415	111.	83.2	2079.5	*	4	18051082	0.	0.0	2065.0	*	7	01401749	0.	0.0	2065.0
2	1035	416	111.	82.4	2079.5	*	4	18101083	0.	0.0	2065.0	*	7	01451750	0.	0.0	2065.0
2	1040	417	111.	81.6	2079.4	*	4	18151084	0.	0.0	2065.0	*	7	01501751	0.	0.0	2065.0
2	1045	418	111.	80.9	2079.3	*	4	18201085	0.	0.0	2065.0	*	7	01551752	0.	0.0	2065.0
2	1050	419	110.	80.1	2079.2	*	4	18251086	0.	0.0	2065.0	*	7	02001753	0.	0.0	2065.0
2	1055	420	110.	79.4	2079.2	*	4	18301087	0.	0.0	2065.0	*	7	02051754	0.	0.0	2065.0
2	1100	421	110.	78.6	2079.1	*	4	18351088	0.	0.0	2065.0	*	7	02101755	0.	0.0	2065.0
2	1105	422	109.	77.9	2079.0	*	4	18401089	0.	0.0	2065.0	*	7	02151756	0.	0.0	2065.0
2	1110	423	109.	77.1	2078.9	*	4	18451090	0.	0.0	2065.0	*	7	02201757	0.	0.0	2065.0
2	1115	424	109.	76.4	2078.9	*	4	18501091	0.	0.0	2065.0	*	7	02251758	0.	0.0	2065.0
2	1120	425	109.	75.6	2078.8	*	4	18551092	0.	0.0	2065.0	*	7	02301759	0.	0.0	2065.0
2	1125	426	108.	74.9	2078.7	*	4	19001093	0.	0.0	2065.0	*	7	02351760	0.	0.0	2065.0
2	1130	427	108.	74.1	2078.7	*	4	19051094	0.	0.0	2065.0	*	7	02401761	0.	0.0	2065.0
2	1135	428	108.	73.4	2078.6	*	4	19101095	0.	0.0	2065.0	*	7	02451762	0.	0.0	2065.0
2	1140	429	107.	72.6	2078.5	*	4	19151096	0.	0.0	2065.0	*	7	02501763	0.	0.0	2065.0
2	1145	430	107.	71.9	2078.4	*	4	19201097	0.	0.0	2065.0	*	7	02551764	0.	0.0	2065.0
2	1150	431	107.	71.2	2078.4	*	4	19251098	0.	0.0	2065.0	*	7	03001765	0.	0.0	2065.0
2	1155	432	107.	70.4	2078.3	*	4	19301099	0.	0.0	2065.0	*	7	03051766	0.	0.0	2065.0
2	1200	433	106.	69.7	2078.2	*	4	19351100	0.	0.0	2065.0	*	7	03101767	0.	0.0	2065.0
2	1205	434	106.	69.0	2078.2	*	4	19401101	0.	0.0	2065.0	*	7	03151768	0.	0.0	2065.0
2	1210	435	106.	68.3	2078.1	*	4	19451102	0.	0.0	2065.0	*	7	03201769	0.	0.0	2065.0
2	1215	436	105.	67.5	2078.0	*	4	19501103	0.	0.0	2065.0	*	7	03251770	0.	0.0	2065.0
2	1220	437	105.	66.8	2077.9	*	4	19551104	0.	0.0	2065.0	*	7	03301771	0.	0.0	2065.0
2	1225	438	105.	66.1	2077.9	*	4	20001105	0.	0.0	2065.0	*	7	03351772	0.	0.0	2065.0
2	1230	439	105.	65.4	2077.8	*	4	20051106	0.	0.0	2065.0	*	7	03401773	0.	0.0	2065.0
2	1235	440	104.	64.6	2077.7	*	4	20101107	0.	0.0	2065.0	*	7	03451774	0.	0.0	2065.0
2	1240	441	104.	63.9	2077.7	*	4	20151108	0.	0.0	2065.0	*	7	03501775	0.	0.0	2065.0
2	1245	442	104.	63.2	2077.6	*	4	20201109	0.	0.0	2065.0	*	7	03551776	0.	0.0	2065.0

2	1250	443	104.	62.5	2077.5	*	4	20251110	0.	0.0	2065.0	*	7	04001777	0.	0.0	2065.0
2	1255	444	103.	61.8	2077.5	*	4	20301111	0.	0.0	2065.0	*	7	04051778	0.	0.0	2065.0
2	1300	445	103.	61.1	2077.4	*	4	20351112	0.	0.0	2065.0	*	7	04101779	0.	0.0	2065.0
2	1305	446	103.	60.4	2077.3	*	4	20401113	0.	0.0	2065.0	*	7	04151780	0.	0.0	2065.0
2	1310	447	102.	59.7	2077.3	*	4	20451114	0.	0.0	2065.0	*	7	04201781	0.	0.0	2065.0
2	1315	448	102.	59.0	2077.2	*	4	20501115	0.	0.0	2065.0	*	7	04251782	0.	0.0	2065.0
2	1320	449	102.	58.3	2077.1	*	4	20551116	0.	0.0	2065.0	*	7	04301783	0.	0.0	2065.0
2	1325	450	102.	57.6	2077.1	*	4	21001117	0.	0.0	2065.0	*	7	04351784	0.	0.0	2065.0
2	1330	451	101.	56.9	2077.0	*	4	21051118	0.	0.0	2065.0	*	7	04401785	0.	0.0	2065.0
2	1335	452	101.	56.2	2076.9	*	4	21101119	0.	0.0	2065.0	*	7	04451786	0.	0.0	2065.0
2	1340	453	101.	55.5	2076.8	*	4	21151120	0.	0.0	2065.0	*	7	04501787	0.	0.0	2065.0
2	1345	454	101.	54.8	2076.8	*	4	21201121	0.	0.0	2065.0	*	7	04551788	0.	0.0	2065.0
2	1350	455	100.	54.1	2076.7	*	4	21251122	0.	0.0	2065.0	*	7	05001789	0.	0.0	2065.0
2	1355	456	100.	53.4	2076.6	*	4	21301123	0.	0.0	2065.0	*	7	05051790	0.	0.0	2065.0
2	1400	457	100.	52.7	2076.6	*	4	21351124	0.	0.0	2065.0	*	7	05101791	0.	0.0	2065.0
2	1405	458	100.	52.0	2076.5	*	4	21401125	0.	0.0	2065.0	*	7	05151792	0.	0.0	2065.0
2	1410	459	99.	51.3	2076.5	*	4	21451126	0.	0.0	2065.0	*	7	05201793	0.	0.0	2065.0
2	1415	460	99.	50.7	2076.4	*	4	21501127	0.	0.0	2065.0	*	7	05251794	0.	0.0	2065.0
2	1420	461	99.	50.0	2076.3	*	4	21551128	0.	0.0	2065.0	*	7	05301795	0.	0.0	2065.0
2	1425	462	98.	49.3	2076.3	*	4	22001129	0.	0.0	2065.0	*	7	05351796	0.	0.0	2065.0
2	1430	463	98.	48.6	2076.2	*	4	22051130	0.	0.0	2065.0	*	7	05401797	0.	0.0	2065.0
2	1435	464	98.	47.9	2076.1	*	4	22101131	0.	0.0	2065.0	*	7	05451798	0.	0.0	2065.0
2	1440	465	98.	47.3	2076.1	*	4	22151132	0.	0.0	2065.0	*	7	05501799	0.	0.0	2065.0
2	1445	466	97.	46.6	2076.0	*	4	22201133	0.	0.0	2065.0	*	7	05551800	0.	0.0	2065.0
2	1450	467	97.	45.9	2075.9	*	4	22251134	0.	0.0	2065.0	*	7	06001801	0.	0.0	2065.0
2	1455	468	97.	45.3	2075.9	*	4	22301135	0.	0.0	2065.0	*	7	06051802	0.	0.0	2065.0
2	1500	469	96.	44.6	2075.8	*	4	22351136	0.	0.0	2065.0	*	7	06101803	0.	0.0	2065.0
2	1505	470	96.	43.9	2075.7	*	4	22401137	0.	0.0	2065.0	*	7	06151804	0.	0.0	2065.0
2	1510	471	96.	43.3	2075.7	*	4	22451138	0.	0.0	2065.0	*	7	06201805	0.	0.0	2065.0
2	1515	472	96.	42.6	2075.6	*	4	22501139	0.	0.0	2065.0	*	7	06251806	0.	0.0	2065.0
2	1520	473	95.	42.0	2075.5	*	4	22551140	0.	0.0	2065.0	*	7	06301807	0.	0.0	2065.0
2	1525	474	95.	41.3	2075.5	*	4	23001141	0.	0.0	2065.0	*	7	06351808	0.	0.0	2065.0
2	1530	475	95.	40.7	2075.4	*	4	23051142	0.	0.0	2065.0	*	7	06401809	0.	0.0	2065.0
2	1535	476	95.	40.0	2075.4	*	4	23101143	0.	0.0	2065.0	*	7	06451810	0.	0.0	2065.0
2	1540	477	94.	39.4	2075.3	*	4	23151144	0.	0.0	2065.0	*	7	06501811	0.	0.0	2065.0
2	1545	478	94.	38.7	2075.2	*	4	23201145	0.	0.0	2065.0	*	7	06551812	0.	0.0	2065.0
2	1550	479	94.	38.1	2075.2	*	4	23251146	0.	0.0	2065.0	*	7	07001813	0.	0.0	2065.0
2	1555	480	93.	37.4	2075.1	*	4	23301147	0.	0.0	2065.0	*	7	07051814	0.	0.0	2065.0
2	1600	481	93.	36.8	2075.0	*	4	23351148	0.	0.0	2065.0	*	7	07101815	0.	0.0	2065.0
2	1605	482	93.	36.1	2075.0	*	4	23401149	0.	0.0	2065.0	*	7	07151816	0.	0.0	2065.0
2	1610	483	92.	35.5	2074.9	*	4	23451150	0.	0.0	2065.0	*	7	07201817	0.	0.0	2065.0
2	1615	484	92.	34.9	2074.8	*	4	23501151	0.	0.0	2065.0	*	7	07251818	0.	0.0	2065.0
2	1620	485	92.	34.2	2074.7	*	4	23551152	0.	0.0	2065.0	*	7	07301819	0.	0.0	2065.0
2	1625	486	91.	33.6	2074.6	*	5	00001153	0.	0.0	2065.0	*	7	07351820	0.	0.0	2065.0
2	1630	487	91.	33.0	2074.5	*	5	00051154	0.	0.0	2065.0	*	7	07401821	0.	0.0	2065.0
2	1635	488	90.	32.4	2074.4	*	5	00101155	0.	0.0	2065.0	*	7	07451822	0.	0.0	2065.0
2	1640	489	90.	31.7	2074.3	*	5	00151156	0.	0.0	2065.0	*	7	07501823	0.	0.0	2065.0
2	1645	490	89.	31.1	2074.2	*	5	00201157	0.	0.0	2065.0	*	7	07551824	0.	0.0	2065.0
2	1650	491	89.	30.5	2074.1	*	5	00251158	0.	0.0	2065.0	*	7	08001825	0.	0.0	2065.0
2	1655	492	88.	29.9	2074.0	*	5	00301159	0.	0.0	2065.0	*	7	08051826	0.	0.0	2065.0
2	1700	493	88.	29.3	2073.9	*	5	00351160	0.	0.0	2065.0	*	7	08101827	0.	0.0	2065.0
2	1705	494	87.	28.7	2073.8	*	5	00401161	0.	0.0	2065.0	*	7	08151828	0.	0.0	2065.0
2	1710	495	87.	28.1	2073.7	*	5	00451162	0.	0.0	2065.0	*	7	08201829	0.	0.0	2065.0
2	1715	496	86.	27.5	2073.6	*	5	00501163	0.	0.0	2065.0	*	7	08251830	0.	0.0	2065.0
2	1720	497	86.	26.9	2073.5	*	5	00551164	0.	0.0	2065.0	*	7	08301831	0.	0.0	2065.0
2	1725	498	85.	26.3	2073.4	*	5	01001165	0.	0.0	2065.0	*	7	08351832	0.	0.0	2065.0
2	1730	499	85.	25.7	2073.3	*	5	01051166	0.	0.0	2065.0	*	7	08401833	0.	0.0	2065.0
2	1735	500	85.	25.1	2073.2	*	5	01101167	0.	0.0	2065.0	*	7	08451834	0.	0.0	2065.0
2	1740	501	84.	24.6	2073.1	*	5	01151168	0.	0.0	2065.0	*	7	08501835	0.	0.0	2065.0
2	1745	502	84.	24.0	2073.0	*	5	01201169	0.	0.0	2065.0	*	7	08551836	0.	0.0	2065.0
2	1750	503	83.	23.4	2072.9	*	5	01251170	0.	0.0	2065.0	*	7	09001837	0.	0.0	2065.0
2	1755	504	83.	22.8	2072.8	*	5	01301171	0.	0.0	2065.0	*	7	09051838	0.	0.0	2065.0
2	1800	505	82.	22.3	2072.7	*	5	01351172	0.	0.0	2065.0	*	7	09101839	0.	0.0	2065.0
2	1805	506	82.	21.7	2072.6	*	5	01401173	0.	0.0	2065.0	*	7	09151840	0.	0.0	2065.0
2	1810	507	81.	21.2	2072.5	*	5	01451174	0.	0.0	2065.0	*	7	09201841	0.	0.0	2065.0
2	1815	508	81.	20.6	2072.5	*	5	01501175	0.	0.0	2065.0	*	7	09251842	0.	0.0	2065.0
2	1820	509	81.	20.0	2072.4	*	5	01551176	0.	0.0	2065.0	*	7	09301843	0.	0.0	2065.0
2	1825	510	80.	19.5	2072.3	*	5	02001177	0.	0.0	2065.0	*	7	09351844	0.	0.0	2065.0
2	1830	511	80.	18.9	2072.2	*	5	02051178	0.	0.0	2065.0	*	7	09401845	0.	0.0	2065.0
2	1835	512	79.	18.4	2072.1	*	5	02101179	0.	0.0	2065.0	*	7	09451846	0.	0.0	2065.0
2	1840	513	79.	17.8	2072.0	*	5	02151180	0.	0.0	2065.0	*	7	09501847	0.	0.0	2065.0
2	1845	514	78.	17.3	2071.9	*	5	02201181	0.	0.0	2065.0	*	7	09551848	0.	0.0	2065.0
2	1850	515	78.	16.8	2071.8	*	5	02251182	0.	0.0	2065.0	*	7	10001849	0.	0.0	2065.0
2	1855	516	77.	16.2	2071.8	*	5	02301183	0.	0.0	2065.0	*	7	10051850	0.	0.0	2065.0
2	1900	517	77.	15.7	2071.7	*	5	02351184	0.	0.0	2065.0	*	7	10101851	0.	0.0	2065.0
2	1905	518	76.	15.2	2071.6	*	5	02401185	0.	0.0	2065.0	*	7	10151852	0.	0.0	2065.0
2	1910	519	76.	14.7	2071.5	*	5	02451186	0.	0.0	2065.0	*	7	10201853	0.	0.0	2065.0
2	1915	520	75.	14.1	2071.4	*	5	02501187	0.	0.0	2065.0	*	7	10251854	0.	0.0	2065.0
2	1920	521	75.	13.6	2071.3	*	5	02551188	0.	0.0	2065.0	*	7	10301855	0.	0.0	2065.0
2	1925	522	74.	13.1	2071.2	*	5	03001189	0.	0.0	2065.0	*	7	10351856	0.	0.0	2065.0
2	1930	523	74.	12.6	2071.2	*	5	03051190	0.	0.0	2065.0	*	7	10401857	0.	0.0	2065.0
2	1935	524	74.	12.1	2071.1	*	5	03101191	0.	0.0	2065.0	*	7	10451858	0.	0.0	2065.0
2	1940	525	73.	11.6	2071.0	*	5	03151192	0.	0.0	2065.0	*	7	10501859	0.	0.0	2065.0
2	1945	526	73.	11.1	2070.9	*	5	03201193	0.	0.0	2065.0	*	7	10551860	0.	0.0	2065.0
2	1950	527	72.	10.6	2070.8	*	5	03251194	0.	0.0	2065.0	*	7	11001861	0.	0.0	2065.0
2	1955	528	72.	10.1	2070.8	*	5	03301195	0.	0.0	2065.0	*	7	11051862	0.	0.0	2065.0
2	2000	529	71.	9.6	2070.7	*	5	03351196	0.	0.0	2065.0	*	7	11101863	0.	0.0	2065.0
2	2005	530	71.	9.1	2070.6	*	5	03401197	0.	0.0	2065.0	*	7	11151864	0.	0.0	2065.0
2	2010	531	70.	8.6	2070.5	*	5	03451198	0.	0.0	2065.0	*	7	11201865	0.	0.0	2065.0
2	2015	532	70.	8.1	2070.4	*	5	03501199	0.	0.0	2065.0	*	7	11251866	0.	0.0	2065.0
2	2020	533	69.	7.7	2070.4	*	5	03551200	0.	0.0	2065.0	*	7	11301867	0.	0.0	2065.0
2	2025	534	69.	7.2	2070.3	*	5	04001201	0.	0.0	2065.0	*	7	11351868	0.	0.0	2065.0
2	2030	535	68.	6.7	2070.2	*	5	04051202	0.	0.0	2065.0	*	7	11401869	0.	0.0	2065.0
2	2035	536	68.	6.2	2070.1	*	5	04101203	0.	0.0	2065.0	*	7	11451870	0.	0.0	2065.0

2	2040 537	67.	5.8	2070.1	*	5	04151204	0.	0.0	2065.0	*	7	11501871	0.	0.0 2065.0
2	2045 538	67.	5.3	2070.0	*	5	04201205	0.	0.0	2065.0	*	7	11551872	0.	0.0 2065.0
2	2050 539	65.	4.9	2069.7	*	5	04251206	0.	0.0	2065.0	*	7	12001873	0.	0.0 2065.0
2	2055 540	64.	4.4	2069.5	*	5	04301207	0.	0.0	2065.0	*	7	12051874	0.	0.0 2065.0
2	2100 541	62.	4.0	2069.3	*	5	04351208	0.	0.0	2065.0	*	7	12101875	0.	0.0 2065.0
2	2105 542	61.	3.6	2069.1	*	5	04401209	0.	0.0	2065.0	*	7	12151876	0.	0.0 2065.0
2	2110 543	58.	3.1	2068.8	*	5	04451210	0.	0.0	2065.0	*	7	12201877	0.	0.0 2065.0
2	2115 544	53.	2.8	2068.6	*	5	04501211	0.	0.0	2065.0	*	7	12251878	0.	0.0 2065.0
2	2120 545	49.	2.4	2068.4	*	5	04551212	0.	0.0	2065.0	*	7	12301879	0.	0.0 2065.0
2	2125 546	45.	2.1	2068.2	*	5	05001213	0.	0.0	2065.0	*	7	12351880	0.	0.0 2065.0
2	2130 547	41.	1.8	2068.0	*	5	05051214	0.	0.0	2065.0	*	7	12401881	0.	0.0 2065.0
2	2135 548	36.	1.5	2067.8	*	5	05101215	0.	0.0	2065.0	*	7	12451882	0.	0.0 2065.0
2	2140 549	32.	1.3	2067.5	*	5	05151216	0.	0.0	2065.0	*	7	12501883	0.	0.0 2065.0
2	2145 550	29.	1.1	2067.4	*	5	05201217	0.	0.0	2065.0	*	7	12551884	0.	0.0 2065.0
2	2150 551	26.	0.9	2067.2	*	5	05251218	0.	0.0	2065.0	*	7	13001885	0.	0.0 2065.0
2	2155 552	24.	0.7	2067.0	*	5	05301219	0.	0.0	2065.0	*	7	13051886	0.	0.0 2065.0
2	2200 553	20.	0.6	2066.8	*	5	05351220	0.	0.0	2065.0	*	7	13101887	0.	0.0 2065.0
2	2205 554	17.	0.5	2066.5	*	5	05401221	0.	0.0	2065.0	*	7	13151888	0.	0.0 2065.0
2	2210 555	15.	0.3	2066.3	*	5	05451222	0.	0.0	2065.0	*	7	13201889	0.	0.0 2065.0
2	2215 556	12.	0.3	2066.1	*	5	05501223	0.	0.0	2065.0	*	7	13251890	0.	0.0 2065.0
2	2220 557	10.	0.2	2065.9	*	5	05551224	0.	0.0	2065.0	*	7	13301891	0.	0.0 2065.0
2	2225 558	7.	0.1	2065.6	*	5	06001225	0.	0.0	2065.0	*	7	13351892	0.	0.0 2065.0
2	2230 559	5.	0.1	2065.4	*	5	06051226	0.	0.0	2065.0	*	7	13401893	0.	0.0 2065.0
2	2235 560	3.	0.1	2065.3	*	5	06101227	0.	0.0	2065.0	*	7	13451894	0.	0.0 2065.0
2	2240 561	2.	0.0	2065.2	*	5	06151228	0.	0.0	2065.0	*	7	13501895	0.	0.0 2065.0
2	2245 562	1.	0.0	2065.1	*	5	06201229	0.	0.0	2065.0	*	7	13551896	0.	0.0 2065.0
2	2250 563	1.	0.0	2065.1	*	5	06251230	0.	0.0	2065.0	*	7	14001897	0.	0.0 2065.0
2	2255 564	1.	0.0	2065.1	*	5	06301231	0.	0.0	2065.0	*	7	14051898	0.	0.0 2065.0
2	2300 565	0.	0.0	2065.0	*	5	06351232	0.	0.0	2065.0	*	7	14101899	0.	0.0 2065.0
2	2305 566	0.	0.0	2065.0	*	5	06401233	0.	0.0	2065.0	*	7	14151900	0.	0.0 2065.0
2	2310 567	0.	0.0	2065.0	*	5	06451234	0.	0.0	2065.0	*	7	14201901	0.	0.0 2065.0
2	2315 568	0.	0.0	2065.0	*	5	06501235	0.	0.0	2065.0	*	7	14251902	0.	0.0 2065.0
2	2320 569	0.	0.0	2065.0	*	5	06551236	0.	0.0	2065.0	*	7	14301903	0.	0.0 2065.0
2	2325 570	0.	0.0	2065.0	*	5	07001237	0.	0.0	2065.0	*	7	14351904	0.	0.0 2065.0
2	2330 571	0.	0.0	2065.0	*	5	07051238	0.	0.0	2065.0	*	7	14401905	0.	0.0 2065.0
2	2335 572	0.	0.0	2065.0	*	5	07101239	0.	0.0	2065.0	*	7	14451906	0.	0.0 2065.0
2	2340 573	0.	0.0	2065.0	*	5	07151240	0.	0.0	2065.0	*	7	14501907	0.	0.0 2065.0
2	2345 574	0.	0.0	2065.0	*	5	07201241	0.	0.0	2065.0	*	7	14551908	0.	0.0 2065.0
2	2350 575	0.	0.0	2065.0	*	5	07251242	0.	0.0	2065.0	*	7	15001909	0.	0.0 2065.0
2	2355 576	0.	0.0	2065.0	*	5	07301243	0.	0.0	2065.0	*	7	15051910	0.	0.0 2065.0
3	0000 577	0.	0.0	2065.0	*	5	07351244	0.	0.0	2065.0	*	7	15101911	0.	0.0 2065.0
3	0005 578	0.	0.0	2065.0	*	5	07401245	0.	0.0	2065.0	*	7	15151912	0.	0.0 2065.0
3	0010 579	0.	0.0	2065.0	*	5	07451246	0.	0.0	2065.0	*	7	15201913	0.	0.0 2065.0
3	0015 580	0.	0.0	2065.0	*	5	07501247	0.	0.0	2065.0	*	7	15251914	0.	0.0 2065.0
3	0020 581	0.	0.0	2065.0	*	5	07551248	0.	0.0	2065.0	*	7	15301915	0.	0.0 2065.0
3	0025 582	0.	0.0	2065.0	*	5	08001249	0.	0.0	2065.0	*	7	15351916	0.	0.0 2065.0
3	0030 583	0.	0.0	2065.0	*	5	08051250	0.	0.0	2065.0	*	7	15401917	0.	0.0 2065.0
3	0035 584	0.	0.0	2065.0	*	5	08101251	0.	0.0	2065.0	*	7	15451918	0.	0.0 2065.0
3	0040 585	0.	0.0	2065.0	*	5	08151252	0.	0.0	2065.0	*	7	15501919	0.	0.0 2065.0
3	0045 586	0.	0.0	2065.0	*	5	08201253	0.	0.0	2065.0	*	7	15551920	0.	0.0 2065.0
3	0050 587	0.	0.0	2065.0	*	5	08251254	0.	0.0	2065.0	*	7	16001921	0.	0.0 2065.0
3	0055 588	0.	0.0	2065.0	*	5	08301255	0.	0.0	2065.0	*	7	16051922	0.	0.0 2065.0
3	0100 589	0.	0.0	2065.0	*	5	08351256	0.	0.0	2065.0	*	7	16101923	0.	0.0 2065.0
3	0105 590	0.	0.0	2065.0	*	5	08401257	0.	0.0	2065.0	*	7	16151924	0.	0.0 2065.0
3	0110 591	0.	0.0	2065.0	*	5	08451258	0.	0.0	2065.0	*	7	16201925	0.	0.0 2065.0
3	0115 592	0.	0.0	2065.0	*	5	08501259	0.	0.0	2065.0	*	7	16251926	0.	0.0 2065.0
3	0120 593	0.	0.0	2065.0	*	5	08551260	0.	0.0	2065.0	*	7	16301927	0.	0.0 2065.0
3	0125 594	0.	0.0	2065.0	*	5	09001261	0.	0.0	2065.0	*	7	16351928	0.	0.0 2065.0
3	0130 595	0.	0.0	2065.0	*	5	09051262	0.	0.0	2065.0	*	7	16401929	0.	0.0 2065.0
3	0135 596	0.	0.0	2065.0	*	5	09101263	0.	0.0	2065.0	*	7	16451930	0.	0.0 2065.0
3	0140 597	0.	0.0	2065.0	*	5	09151264	0.	0.0	2065.0	*	7	16501931	0.	0.0 2065.0
3	0145 598	0.	0.0	2065.0	*	5	09201265	0.	0.0	2065.0	*	7	16551932	0.	0.0 2065.0
3	0150 599	0.	0.0	2065.0	*	5	09251266	0.	0.0	2065.0	*	7	17001933	0.	0.0 2065.0
3	0155 600	0.	0.0	2065.0	*	5	09301267	0.	0.0	2065.0	*	7	17051934	0.	0.0 2065.0
3	0200 601	0.	0.0	2065.0	*	5	09351268	0.	0.0	2065.0	*	7	17101935	0.	0.0 2065.0
3	0205 602	0.	0.0	2065.0	*	5	09401269	0.	0.0	2065.0	*	7	17151936	0.	0.0 2065.0
3	0210 603	0.	0.0	2065.0	*	5	09451270	0.	0.0	2065.0	*	7	17201937	0.	0.0 2065.0
3	0215 604	0.	0.0	2065.0	*	5	09501271	0.	0.0	2065.0	*	7	17251938	0.	0.0 2065.0
3	0220 605	0.	0.0	2065.0	*	5	09551272	0.	0.0	2065.0	*	7	17301939	0.	0.0 2065.0
3	0225 606	0.	0.0	2065.0	*	5	10001273	0.	0.0	2065.0	*	7	17351940	0.	0.0 2065.0
3	0230 607	0.	0.0	2065.0	*	5	10051274	0.	0.0	2065.0	*	7	17401941	0.	0.0 2065.0
3	0235 608	0.	0.0	2065.0	*	5	10101275	0.	0.0	2065.0	*	7	17451942	0.	0.0 2065.0
3	0240 609	0.	0.0	2065.0	*	5	10151276	0.	0.0	2065.0	*	7	17501943	0.	0.0 2065.0
3	0245 610	0.	0.0	2065.0	*	5	10201277	0.	0.0	2065.0	*	7	17551944	0.	0.0 2065.0
3	0250 611	0.	0.0	2065.0	*	5	10251278	0.	0.0	2065.0	*	7	18001945	0.	0.0 2065.0
3	0255 612	0.	0.0	2065.0	*	5	10301279	0.	0.0	2065.0	*	7	18051946	0.	0.0 2065.0
3	0300 613	0.	0.0	2065.0	*	5	10351280	0.	0.0	2065.0	*	7	18101947	0.	0.0 2065.0
3	0305 614	0.	0.0	2065.0	*	5	10401281	0.	0.0	2065.0	*	7	18151948	0.	0.0 2065.0
3	0310 615	0.	0.0	2065.0	*	5	10451282	0.	0.0	2065.0	*	7	18201949	0.	0.0 2065.0
3	0315 616	0.	0.0	2065.0	*	5	10501283	0.	0.0	2065.0	*	7	18251950	0.	0.0 2065.0
3	0320 617	0.	0.0	2065.0	*	5	10551284	0.	0.0	2065.0	*	7	18301951	0.	0.0 2065.0
3	0325 618	0.	0.0	2065.0	*	5	11001285	0.	0.0	2065.0	*	7	18351952	0.	0.0 2065.0
3	0330 619	0.	0.0	2065.0	*	5	11051286	0.	0.0	2065.0	*	7	18401953	0.	0.0 2065.0
3	0335 620	0.	0.0	2065.0	*	5	11101287	0.	0.0	2065.0	*	7	18451954	0.	0.0 2065.0
3	0340 621	0.	0.0	2065.0	*	5	11151288	0.	0.0	2065.0	*	7	18501955	0.	0.0 2065.0
3	0345 622	0.	0.0	2065.0	*	5	11201289	0.	0.0	2065.0	*	7	18551956	0.	0.0 2065.0
3	0350 623	0.	0.0	2065.0	*	5	11251290	0.	0.0	2065.0	*	7	19001957	0.	0.0 2065.0
3	0355 624	0.	0.0	2065.0	*	5	11301291	0.	0.0	2065.0	*	7	19051958	0.	0.0 2065.0
3	0400 625	0.	0.0	2065.0	*	5	11351292	0.	0.0	2065.0	*	7	19101959	0.	0.0 2065.0
3	0405 626	0.	0.0	2065.0	*	5	11401293	0.	0.0	2065.0	*	7	19151960	0.	0.0 2065.0
3	0410 627	0.	0.0	2065.0	*	5	11451294	0.	0.0	2065.0	*	7	19201961	0.	0.0 2065.0
3	0415 628	0.	0.0	2065.0	*	5	11501295	0.	0.0	2065.0	*	7	19251962	0.	0.0 2065.0
3	0420 629	0.	0.0	2065.0	*	5	11551296	0.	0.0	2065.0	*	7	19301963	0.	0.0 2065.0
3	0425 630	0.	0.0	2065.0	*	5	12001297	0.	0.0	2065.0	*	7	19351964	0.	0.0 2065.0

3	0430	631	0.	0.0	2065.0	*	5	12051298	0.	0.0	2065.0	*	7	19401965	0.	0.0	2065.0
3	0435	632	0.	0.0	2065.0	*	5	12101299	0.	0.0	2065.0	*	7	19451966	0.	0.0	2065.0
3	0440	633	0.	0.0	2065.0	*	5	12151300	0.	0.0	2065.0	*	7	19501967	0.	0.0	2065.0
3	0445	634	0.	0.0	2065.0	*	5	12201301	0.	0.0	2065.0	*	7	19551968	0.	0.0	2065.0
3	0450	635	0.	0.0	2065.0	*	5	12251302	0.	0.0	2065.0	*	7	20001969	0.	0.0	2065.0
3	0455	636	0.	0.0	2065.0	*	5	12301303	0.	0.0	2065.0	*	7	20051970	0.	0.0	2065.0
3	0500	637	0.	0.0	2065.0	*	5	12351304	0.	0.0	2065.0	*	7	20101971	0.	0.0	2065.0
3	0505	638	0.	0.0	2065.0	*	5	12401305	0.	0.0	2065.0	*	7	20151972	0.	0.0	2065.0
3	0510	639	0.	0.0	2065.0	*	5	12451306	0.	0.0	2065.0	*	7	20201973	0.	0.0	2065.0
3	0515	640	0.	0.0	2065.0	*	5	12501307	0.	0.0	2065.0	*	7	20251974	0.	0.0	2065.0
3	0520	641	0.	0.0	2065.0	*	5	12551308	0.	0.0	2065.0	*	7	20301975	0.	0.0	2065.0
3	0525	642	0.	0.0	2065.0	*	5	13001309	0.	0.0	2065.0	*	7	20351976	0.	0.0	2065.0
3	0530	643	0.	0.0	2065.0	*	5	13051310	0.	0.0	2065.0	*	7	20401977	0.	0.0	2065.0
3	0535	644	0.	0.0	2065.0	*	5	13101311	0.	0.0	2065.0	*	7	20451978	0.	0.0	2065.0
3	0540	645	0.	0.0	2065.0	*	5	13151312	0.	0.0	2065.0	*	7	20501979	0.	0.0	2065.0
3	0545	646	0.	0.0	2065.0	*	5	13201313	0.	0.0	2065.0	*	7	20551980	0.	0.0	2065.0
3	0550	647	0.	0.0	2065.0	*	5	13251314	0.	0.0	2065.0	*	7	21001981	0.	0.0	2065.0
3	0555	648	0.	0.0	2065.0	*	5	13301315	0.	0.0	2065.0	*	7	21051982	0.	0.0	2065.0
3	0600	649	0.	0.0	2065.0	*	5	13351316	0.	0.0	2065.0	*	7	21101983	0.	0.0	2065.0
3	0605	650	0.	0.0	2065.0	*	5	13401317	0.	0.0	2065.0	*	7	21151984	0.	0.0	2065.0
3	0610	651	0.	0.0	2065.0	*	5	13451318	0.	0.0	2065.0	*	7	21201985	0.	0.0	2065.0
3	0615	652	0.	0.0	2065.0	*	5	13501319	0.	0.0	2065.0	*	7	21251986	0.	0.0	2065.0
3	0620	653	0.	0.0	2065.0	*	5	13551320	0.	0.0	2065.0	*	7	21301987	0.	0.0	2065.0
3	0625	654	0.	0.0	2065.0	*	5	14001321	0.	0.0	2065.0	*	7	21351988	0.	0.0	2065.0
3	0630	655	0.	0.0	2065.0	*	5	14051322	0.	0.0	2065.0	*	7	21401989	0.	0.0	2065.0
3	0635	656	0.	0.0	2065.0	*	5	14101323	0.	0.0	2065.0	*	7	21451990	0.	0.0	2065.0
3	0640	657	0.	0.0	2065.0	*	5	14151324	0.	0.0	2065.0	*	7	21501991	0.	0.0	2065.0
3	0645	658	0.	0.0	2065.0	*	5	14201325	0.	0.0	2065.0	*	7	21551992	0.	0.0	2065.0
3	0650	659	0.	0.0	2065.0	*	5	14251326	0.	0.0	2065.0	*	7	22001993	0.	0.0	2065.0
3	0655	660	0.	0.0	2065.0	*	5	14301327	0.	0.0	2065.0	*	7	22051994	0.	0.0	2065.0
3	0700	661	0.	0.0	2065.0	*	5	14351328	0.	0.0	2065.0	*	7	22101995	0.	0.0	2065.0
3	0705	662	0.	0.0	2065.0	*	5	14401329	0.	0.0	2065.0	*	7	22151996	0.	0.0	2065.0
3	0710	663	0.	0.0	2065.0	*	5	14451330	0.	0.0	2065.0	*	7	22201997	0.	0.0	2065.0
3	0715	664	0.	0.0	2065.0	*	5	14501331	0.	0.0	2065.0	*	7	22251998	0.	0.0	2065.0
3	0720	665	0.	0.0	2065.0	*	5	14551332	0.	0.0	2065.0	*	7	22301999	0.	0.0	2065.0
3	0725	666	0.	0.0	2065.0	*	5	15001333	0.	0.0	2065.0	*	7	22352000	0.	0.0	2065.0
3	0730	667	0.	0.0	2065.0	*	5	15051334	0.	0.0	2065.0	*					

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	166.58-HR
		(CFS)				
680.	13.33		266.	163.	68.	29.
		(INCHES)	0.755	1.843	2.305	2.305
		(AC-FT)	132.	323.	404.	404.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	166.58-HR
232.	13.33	221.	166.	59.	26.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	166.58-HR
2090.50	13.33	2089.75	2085.83	2073.29	2068.58

CUMULATIVE AREA = 3.28 SQ MI

1

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	S30N	1262.	12.33	151.	44.	15.	0.65		
ROUTED TO	R30N	1236.	12.33	151.	44.	15.	0.65	103.91	12.33
HYDROGRAPH AT	S31.1	444.	12.33	52.	15.	5.	0.27		
2 COMBINED AT	C31.1	1681.	12.33	203.	60.	20.	0.92		
HYDROGRAPH AT	S34.2	750.	12.33	88.	26.	9.	0.44		
2 COMBINED AT	C34.2	2431.	12.33	291.	85.	29.	1.36		
HYDROGRAPH AT	S35N	1348.	12.25	127.	37.	12.	0.55		
DIVERSION TO	D35NL	0.	12.25	0.	0.	0.	0.55		

```
          HYDROGRAPH AT
+                         D35NR      1348.   12.25        127.        37.        12.      0.55
          ROUTED TO
+                         R35NR      1130.   12.33        127.        37.        12.      0.55
+                                                                                          102.58       12.33
          HYDROGRAPH AT
+                         S36.2       431.   12.25         41.        12.         4.      0.21
          2 COMBINED AT
+                         C36.2      1542.   12.25        168.        49.        16.      0.76
          DIVERSION TO
+                         D36.2L        0.   12.25          0.         0.         0.      0.76
          HYDROGRAPH AT
+                         D36.2R     1542.   12.25        168.        49.        16.      0.76
          ROUTED TO
+                         R36.2R     1123.   12.58        168.        49.        16.      0.76
+                                                                                          101.80       12.58
          HYDROGRAPH AT
+                         S34.1      2117.   12.25        232.        68.        23.      1.16
          2 COMBINED AT
+                         C34.1      2311.   12.33        399.       117.        39.      1.92
          2 COMBINED AT
+                         HVDB-I     4742.   12.33        689.       203.        68.      3.28
          ROUTED TO
+                         HVDB-O      680.   13.33        266.       163.        68.      3.28
+                                                                                         2090.50       13.33
1
                                   SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                       (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                       COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT        PEAK    TIME TO      VOLUME      DT       PEAK    TIME TO     VOLUME
                                                    PEAK                                       PEAK

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

            S30N   MANE        4.55    1279.20    736.28       2.53     5.00    1261.78    740.00       2.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8806E+02 OUTFLOW=0.8790E+02 BASIN STORAGE=0.8003E-04 PERCENT ERROR=   0.2

            S31.1  MANE        3.95     454.64    739.32       2.15     5.00     444.42    740.00       2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3068E+02 OUTFLOW=0.3058E+02 BASIN STORAGE=0.5201E-04 PERCENT ERROR=   0.3

            S34.2  MANE        3.87     779.44    736.87       2.18     5.00     750.17    740.00       2.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5173E+02 OUTFLOW=0.5159E+02 BASIN STORAGE=0.7029E-04 PERCENT ERROR=   0.3

            S35N   MANE        2.27    1438.45    731.99       2.53     5.00    1348.16    735.00       2.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7407E+02 OUTFLOW=0.7404E+02 BASIN STORAGE=0.4486E-04 PERCENT ERROR=   0.0

            S36.2  MANE        1.79     446.93    733.84       2.16     5.00     430.98    735.00       2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2404E+02 OUTFLOW=0.2402E+02 BASIN STORAGE=0.2074E-04 PERCENT ERROR=   0.1

            S34.1  MANE        3.14    2155.37    737.88       2.18     5.00    2117.43    735.00       2.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1355E+03 OUTFLOW=0.1352E+03 BASIN STORAGE=0.1771E-03 PERCENT ERROR=   0.2


*** NORMAL END OF HEC-1 ***
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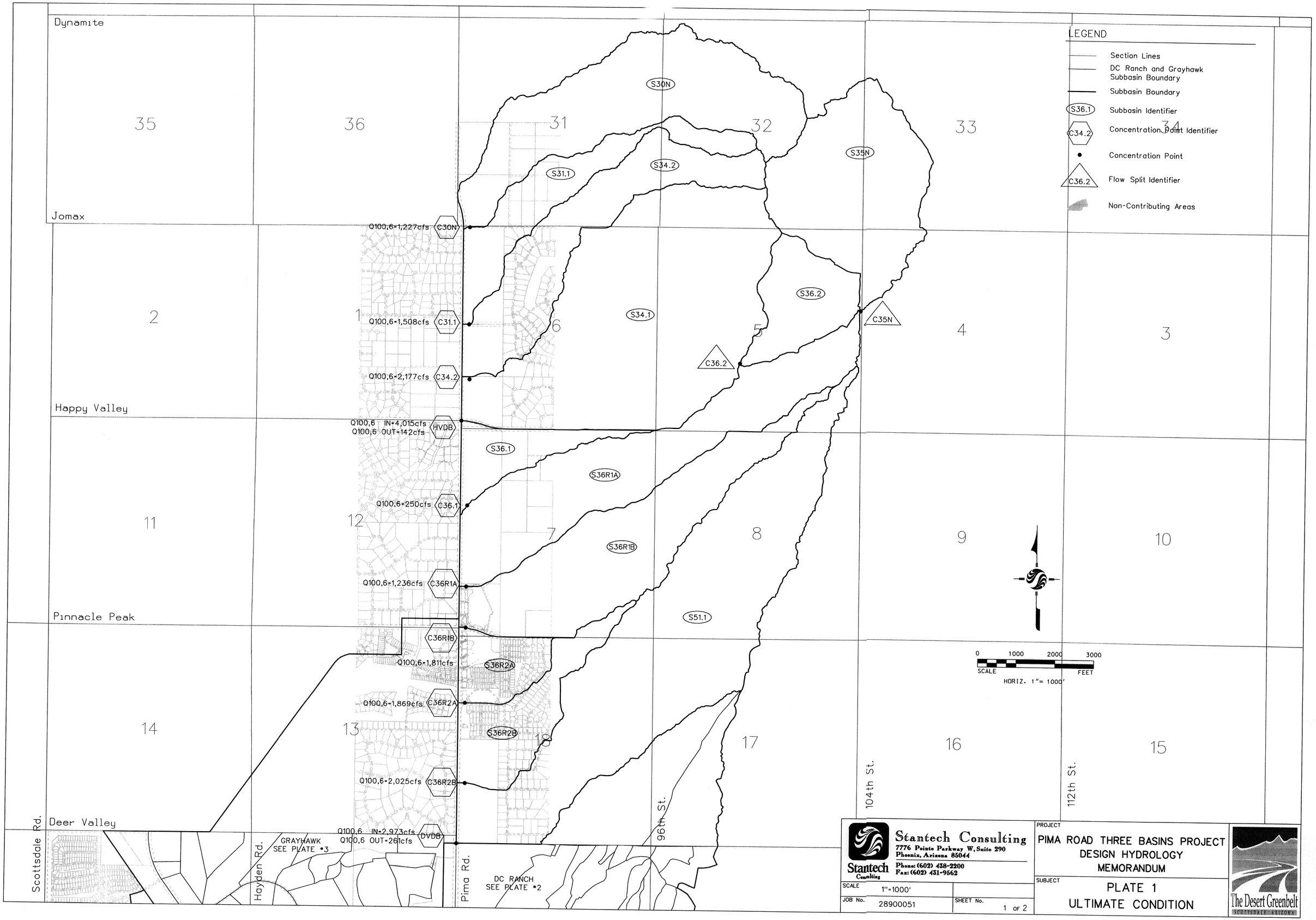
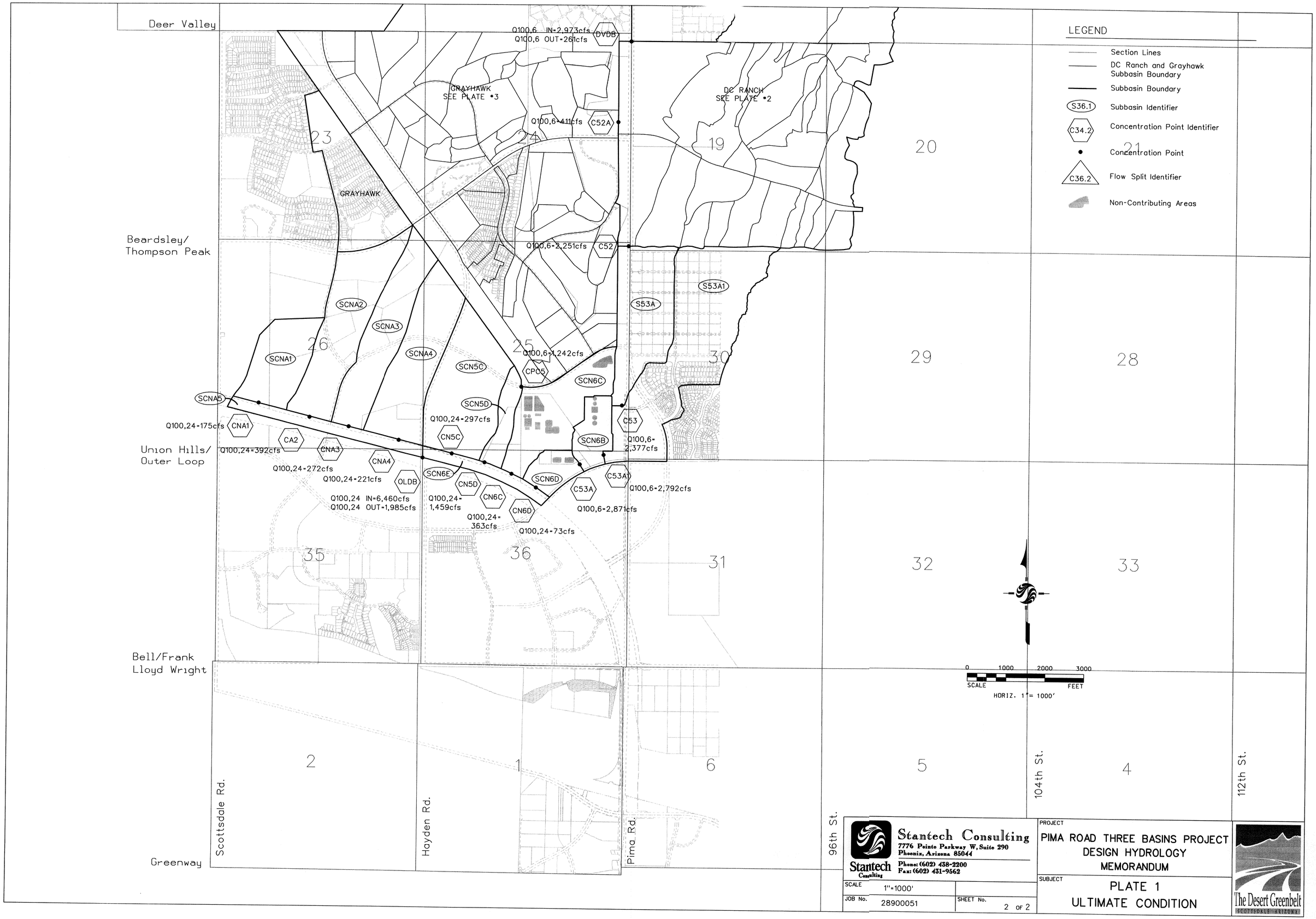
APPENDIX H

Diskette of HEC-1 Files


LEGEND
Section Lines
DC Ranch and Grayhawk Subbasin Boundary
Subbasin Boundary
S36.1 Subbasin Identifier
C34.2 Concentration Point Identifier
Concentration Point
C36.2 Flow Split Identifier
Non-Contributing Areas
Dynamite
Jomax
Happy Valley
Pinnacle Peak
Deer Valley
Scottsdale Rd.
Hayden Rd.
Pima Rd.
96th St.
104th St.
112th St.
35
36
31
32
33
34
2
1
6
5
4
3
11
12
7
8
9
10
14
13
18
17
16
15
S30N
S31.1
S34.2
S35N
S36.2
S34.1
C35N
C36.2
S36.1
S36R1A
S36R1B
S51.1
S36R2A
S36R2B
Q100,6=1,227cfs C30N
Q100,6=1,508cfs C31.1
Q100,6=2,177cfs C34.2
Q100,6 IN=4,015cfs
Q100,6 OUT=142cfs HVDB
Q100,6=250cfs C36.1
Q100,6=1,236cfs C36R1A
C36R1B
Q100,6=1,81cfs
Q100,6=1,869cfs C36R2A
Q100,6=2,025cfs C36R2B
Q100,6 IN=2,973cfs
Q100,6 OUT=261cfs DVDB
GRAYHAWK
SEE PLATE #3
DC RANCH
SEE PLATE #2
0 1000 2000 3000
SCALE FEET
HORIZ. 1"= 1000'
Stantech Consulting
7776 Pointe Parkway W, Suite 290
Phoenix, Arizona 85044
Phone: (602) 438-2200
Fax: (602) 431-9562
SCALE 1"=1000'
JOB No. 28900051
SHEET No. 1 of 2
PROJECT
PIMA ROAD THREE BASINS PROJECT
DESIGN HYDROLOGY
MEMORANDUM
SUBJECT
PLATE 1
ULTIMATE CONDITION
The Desert Greenbelt
SCOTTSDALE ARIZONA



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SCALE	1"=1000'
JOB No.	28900051
SHEET No.	2 OF 2

PROJECT
PIMA ROAD THREE BASINS PROJECT
DESIGN HYDROLOGY
MEMORANDUM

SUBJECT
PLATE 1
ULTIMATE CONDITION

The Desert Greenbelt
SCOTTSDALE ARIZONA

NOTES:

ALL INFORMATION PROVIDED BY WOOD/PATEL ASSOCIATES

LEGEND

- FLOW PATH
- SUBBASIN BOUNDARY
- NONCONTRIBUTING SUBBASINS TO THE PIMA ROAD CHANNEL WATERSHED
- 52C15 — SUBBASIN IDENTIFIER
- ROUTE
- CONCENTRATION POINT

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SCALE	1" = 300'
JOB No.	28900051
SHEET No.	1 OF 1

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SUBJECT
PLATE 2
DC Ranch On-Site Watershed Map

The Desert Greenbelt

DEER VALLEY ROAD ALIGNMENT

DEER VALLEY CHANNEL Q100=779CFS

37AW 37AW 37AE WATC

PC1 SUB18NA 60CFS SUB18NB 26CFS SUB18NC SUB19N CP20 SUB20N SUB14N

RET141 Q100= 617CFS

SUB13N SUB7N CP5N Q100= 377CFS SUB5N SUB1N CP1N Q100=43CFS

SUB8NB 344CFS SUB8NA SR8NA SR8NB SUB8NC CP8NC SR8NC Q100=18CFS SUB6B

SUB2NA SR2NA Q100=64CFS SUB2NB SUB6N CP2NB Q100= 97CFS CP2N SUB3N Q100=4CFS

CP19 RET14 Q100= 585CFS CP18N Q100= 615CFS GRAYHAWK DRIVE SUB10A SUB12NA SR12NA SUB16NA SUB9N

SR6B RET6N Q100= 0CFS 27CFS SUB4N CP4N Q100=82CFS SUB6A

SUB12NB SUB10B CP10B Q100=212CFS CP9N Q100=142CFS SUB17NA SR17NA SUB17NB SUB17NC

CPC1 Q100= 710CFS HAYDEN ROAD SUB16NB SR12NB SUB11NA SR11NA 145CFS SUB11NB SUB11NC SR11NC 84CFS SR11NB Q100=72CFS

16NA Q100= 39CFS 16NB Q100= 44CFS

C16NA1 Q100= 725CFS PC2 SUB16NC CP17A Q100=44CFS SUB3D1 SUB3D2 SUB3A 6N Q100=368CFS SUB3C THOMPSON PEAK PARKWAY GC1018 SUB1-2

SUB15N THOMPSON PEAK PARKWAY SUB3B1 CP3B1 Q100= 51CFS GC1-9

C16NB1 Q100= 721CFS CP16NC Q100= 100CFS

C16NC1 Q100= 790CFS CP15N Q100=162CFS SUB3B2 SUB3D3 GCRB1-8 SR18S Q100= 0 CFS OUTFLOW SUB3S SUB4S

SRPC2 Q100=813CFS SUB3F CP3S Q100= 409CFS

INTERIM OUTFALL TO NATURAL GRADE. REFER TO POWER CORRIDOR PLANS BY GILBERTSON & ASSOC.

CP3F Q100= 157CFS SUB3E1 GC2-8 SRGC28 Q100= 436CFS GC1216 SUB5S

CP3E1 Q100= 117CFS SUB3E2 CP3E2 Q100= 81CFS GC1415

HAYDEN ROAD SUB3E3 GC7 GRAYHAWK DRIVE SUB6S SRRET2 Q100= 0 CFS OUTFLOW SUB7S

CP3E3 Q100= 55CFS CP7S Q100=438CFS SUB8S Q100= 70CFS SUB7A

SUB9S Q100= 64CFS SUB11S Q100= 103CFS GC36 SRGC36 Q100=193CFS SUB10S CP10S Q100= 94CFS GC45 HUALAPAI DRIVE CGC45 Q100=40CFS

PIMA ROAD PIMA ROAD CHANNEL

LEGEND

2a.	PARCEL OR TRACT NAME
→	FLOW DIRECTION
———	DRAINAGE BOUNDARY
GC36	BASIN IDENTIFICATION
● CP1	CONCENTRATION POINT
● DET1	DETENTION BASIN
Q100=700 CFS	100-YEAR, 6-HOUR PROPOSED PEAK DISCHARGE
▒	PROPOSED CHANNELS AND DETENTION BASINS

0 400 800 1200
SCALE FEET

NOTES:

1. ALL INFORMATION PROVIDED BY DEI PROFESSIONAL SERVICES.
2. ALL OFF-SITE DISCHARGES TO BE CONVEYED DOWN THE POWER LINE CHANNEL TO THE UNION HILLS DETENTION BASIN.

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SCALE 1"=400'	
JOB No. 28900051	SHEET No. 1 OF 1

PROJECT
PIMA ROAD THREE BASINS PROJECT
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SUBJECT
PLATE 3
Grayhawk On-Site Watershed Map

The Desert Greenbelt