MASTER DRAINAGE REPORT
FOR
DEVELOPMENT UNITS 8 & 9
AT
EASTMARK

February 4, 2013
WP# 123835

Submitted to:

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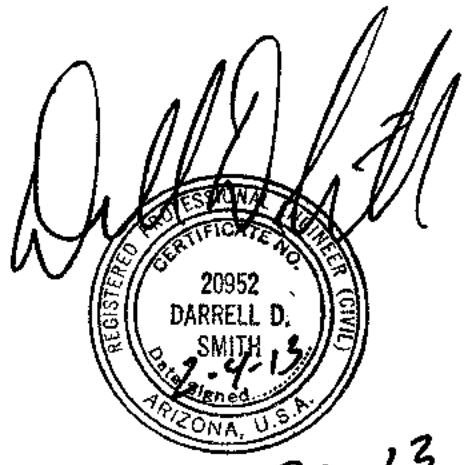

EXPIRES 6-30-13

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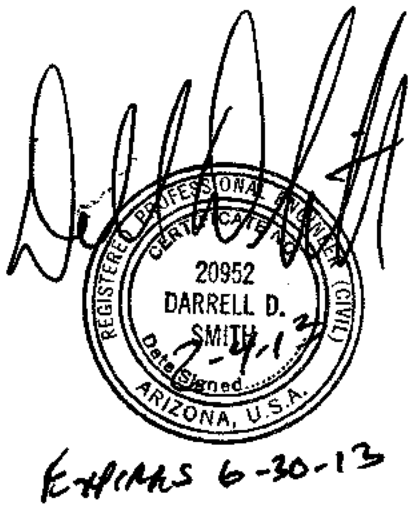

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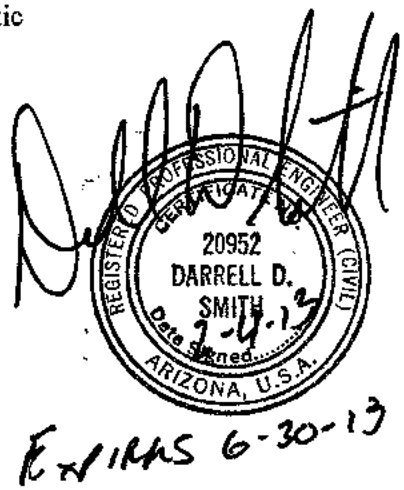

1.0 INTRODUCTION

1.1 General Background and Project Location

Development Units 8 and 9 are located in the southern portion of the Eastmark development, formerly known as Mesa Proving Grounds. The proposed Development Units 8 and 9 are approximately 527-acres within the 3,155-acre Eastmark master planned community, in Mesa, Arizona. It is a Planned Community District (PCD) which will include residential, various community uses (club amenities), and open spaces.

This Master Drainage Report has been prepared in accordance with Wood, Patel & Associates, Inc. (Wood/Patel's) understanding of the City of Mesa (City) and the Flood Control District of Maricopa County (FCDMC) drainage requirements.

The Site is located within a portion of Section 26 of Township 1 South, Range 7 East of the Gila and Salt River Meridian. The Site is bounded by the Ray Road alignment to the north, Williams Field Road on the south, Signal Butte Road to the east, and Spine Road West on the west. Please refer to the attached Plate 1 – *Vicinity Map*.

The Site consists of multiple automotive test tracks and undisturbed desert. The Site was previously used by General Motors as a desert automobile testing facility. The majority of the Site is surrounded by automotive test tracks and undisturbed desert along the northern, western, and southern boundaries. Along the eastern boundary, the Site is bordered by two residential developments, Nova Vista and Mountain Horizons which are mostly constructed and Bella Via, which is currently under construction.

In addition, the Powerline Floodway Channel traverses the northern boundary of the Site south and parallel to the Ray Road alignment. This is a major FCDMC facility that provides conveyance of discharge from the Powerline Flood Retarding Structures, approximately three miles east of the Site, and drainage conveyance for stormwater runoff for areas adjacent to the channel. Ultimately, the flow is conveyed to the East Maricopa Floodway (EMF) west of the Site.

1.2 Scope of the DU 8 & 9 Master Drainage Report

The DU 8 & 9 Master Drainage Report was prepared to support the development of approximately 20 acres of amenities and 1550 single family residential dwelling units. The drainage analysis is consistent with procedures and standards of the City of Mesa and the Flood Control District of Maricopa County. The proposed drainage plan provides an outline for the required major drainage facilities for storage and conveyance of stormwater runoff for the development of DU 8 & 9 at Eastmark. Updates to the Master Drainage Report may be required if significant changes are made to the land uses and assumptions utilized to prepare this report.

2.0 DESCRIPTION OF STUDY AREA

2.1 Existing Soil Conditions

According to the Natural Resources Conservation Service's Soil Survey, Eastmark is located within the Aguila-Carefree soil survey area. The majority of the surface soils onsite are classified as sandy loam, clay loam, or loam. Please refer to Plate 2 – *Soils Map*, and Appendix A for information pertaining to existing soil conditions.

2.2 Rainfall Seasons

There are two distinct rainfall seasons associated with the desert southwest corresponding to the project area. The first season occurs during the winter months from November to March when the area is subjected to occasional storms from the Pacific Ocean. While classified as a rainfall season, there can be long periods where there can be little or no precipitation. Generally storms occurring during the winter rainfall season are classified as being long duration, low intensity storms.

The second rainfall period occurs during the summer months of June through August, and is commonly referred to as Monsoon Season. During this season, Arizona is subjected to widespread thunderstorm activity whose moisture supply originates both in the Gulf of Mexico and along Mexico's west coast. These thunderstorms are typically classified as being short duration, high intensity storms with extreme variability per location.

2.3 FEMA Flood Insurance Rate Map (FIRM)

The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) Panel Number 04013CIND0A dated September 30, 2005, references Panel Number 04013C2705F, which indicates the Site is within Zone "D". Panel Number 04013C2705F has a note that states "Panel Not Printed – Area in Zone D".

Zone "D" is defined by FEMA as follows:

> *"Areas in which flood hazards are undetermined."*

Please refer to Plate 3 – *Flood Insurance Rate Map* for illustration.

2.4 Section 404 Jurisdictional Areas

A Jurisdictional Delineation has been completed by the Corps for the Mesa Proving Grounds. A portion of the Powerline Floodway channel and a small wash have been designated as Jurisdictional and fall within the DU 8 & 9 boundary. Please refer to Plate 4 – *Section 404 Jurisdictional Delineation Map* for location of Jurisdictional Areas.

Proposed disturbances to the Jurisdictional areas are required to be permitted with the Corps. A Section 404 Individual Permit will be required for disturbance during development with conditions that must be adhered to.

2.5 Master Drainage Report for Mesa Proving Grounds

The Master Drainage Report for Mesa Proving Grounds, dated December 20, 2011 by Wood, Patel and Associates, Inc. has set the drainage criteria for the site. The report includes a pre-developed condition HEC-1 model (MGPEX.DAT) as well as a full build out model (20MPGDU7.DAT) which were modified versions of the current flood control district area drainage master plan models. The East Mesa Area Drainage Master Plan (ADMP), prepared in 1998 by Dibble & Associates, Inc. and Hoskin Ryan Consultants, Inc., is a regional drainage study prepared for the FCDMC. A revised update for the Master Report is being submitted for review and approval, concurrent with this DU Master Plan.

Eastmark is located in the eastern portion of the study, which is bound by the FRS in Pinal County to the east and the EMF to the west. In general, the area drains northeast to southwest and outlets into the EMF. The ADMP sets the regional drainage constraints for facilities within the study area of Eastmark. The full build out model was utilized to verify that the development of Eastmark does not negatively impact any drainage infrastructure downstream.

3.0 EXISTING DRAINAGE CONDITION

3.1 Existing Drainage Plan

The Site generally slopes in a southwesterly direction at approximately 0.5 to 1 percent. The peak elevation within the Site is 1440 feet mean sea level(MSL), is located near the intersection of Signal Butte Road and Ray Road. The lowest elevation within the Site is approximately 1,410 feet MSL, located at Williams Field east of Crismon Road alignment (southwest corner of Site). The Site is covered with typical Sonoran Desert vegetation including mesquite trees, saguaro cactus, creosote, etc. is approximately 1,425 feet above MSL.

The existing site is made up of three sub-basins which discharge to the west into the Pacific Proving Grounds site, and has been modeled accordingly within the current 100-year, 24-hour FCDMC model and the Master Drainage Report model. The outfall west of the site discharges in locations of existing washes and the existing channel along the north side of Williams Field Road. Proposed 100-year, 2-hour retention will decrease the runoff volume and peak flow produced on Site.

3.1.1 Northern Boundary

The northern boundary of DU 8 & 9 is bound by the Powerline Floodway. The floodway provides a low flow outlet to FRS dams upstream of the Site and also storm water conveyance for areas adjacent to the channel. The channel precludes storm water generated to the north from entering the Site.

3.1.2 Eastern Boundary

Offsite flows impacting the eastern boundary from Ray Road to Williams Field Road are diverted south by existing berms and a channel along the west side of Signal Butte Road. There are two point impacts from the Mountain Horizons development. One is approximately 1,000 feet south of the Powerline Floodway, where offsite flows are conveyed through a double-barrel 10-foot by 3-foot box culvert. The second point impact is at Galveston Street, where offsite flows are conveyed through a double-barrel 8-foot by 3-foot box culvert. These combined flows are approximately 694 cfs. Between Galveston Street and Williams Field

Road, the upstream impact is from the undeveloped Pacific Proving Grounds, which discharges flow in washes and sheet flow of approximately 775 cfs. The flow continues westerly in a channel between the test track and Williams Field Road, and discharges to the Pacific Proving Grounds. There is an existing channel corridor on Pacific Proving Grounds that receives this flow in the existing condition, routes the flow around the property, and discharges to the Ellsworth Channel. A combined onsite and offsite flow of approximately 1,090 cfs discharges to the Pacific Proving Grounds in this location. In the post-developed condition, the onsite peak flow discharging to the channel is reduced due to onsite retention for the 100-year, 2-hour storm event. A HEC-RAS model, contained in Appendix C, shows this channel has proper capacity to receive the post-developed flow of approximately 946 cfs.

3.1.3 Western Boundary

The western boundary is not impacted by any offsite flows entering the Site. There are several discharge points to Pacific Proving Grounds along this common boundary. In the existing conditions, the 4 discharges are approximately 90 cfs, 225 cfs, 156 cfs, and 1,090 cfs from north to south, respectively.

3.1.4 Southern Boundary

There are no offsite impacts crossing the southern boundary along Williams Field Road.

4.0 PROPOSED DRAINAGE CONDITION

4.1 Proposed Drainage Plan

The drainage concept for DU 8 & 9 is to route offsite flows around the site and direct onsite storm water runoff to retention basins for storage. Offsite runoff impacting the northern boundary will continue to be picked up by the Powerline Floodway, preventing any storm water produced to the north from entering the Site.

Onsite runoff produced onsite will utilize roadways for overland flow conveyance to localized retention basins. Where street capacities are exceeded, vertical curb and/or underground storm drain systems or roadside channels may be utilized to convey the excess runoff volume. Please refer to Plate 5 – *Proposed Condition HEC-1 Schematic* for watershed delineations and locations.

Retention basins will be sized to retain the runoff volume from a 100-year, 2-hour storm event in accordance with jurisdictional requirements. Emergency overflow routes must be provided in the event that retention basin capacities are exceeded due to a storm larger than the design event or back-to-back storms. Retention basins will be designed to drain retained runoff within 36 hours after a storm event. Land uses depicted in the hydrologic models are proposed and subject to change.

In all locations, lowest floor elevations shall be set a minimum of 1 foot above the emergency overflow elevation or any 100-year water surface elevation adjacent the Site, whichever is greater.

4.2 Proposed Condition Hydrology

A proposed condition HEC-1 model (EMDU89.DAT) was created to assess the impact of the developed DU 8 & 9 to the downstream drainage infrastructure. The model was created based upon the most current post developed condition model. Watersheds within the Eastmark DU 8 & 9 were modeled with medium density residential, active open space and general transportation land uses per the FCDMC's DDMSW program.

Retention for DU 8 & 9 was calculated based on the previously mentioned land uses and applied to the proposed condition HEC-1 model. Based on point precipitation frequency

estimates from NOAA Atlas 14, the 100-year, 2-hour precipitation is 2.19 inches. Flows in excess of the 100-year, 2-hour basin capacities within DU 8 & 9 were routed downstream to historic outfall locations.

Offsite routing parameters along Signal Butte Road and Williams Field Road were updated to reflect future channels planned to convey offsite flows along the boundary. The following table provides a summary of 100-year, 24-hour discharges for the existing and proposed conditions which indicates decreased peak discharges leaving the Site.

EXISTING CONDITION		PROPOSED CONDITION	
Location ID	**Discharge**	**Location ID**	**Discharge**
C79B1	1090 cfs	CP22B	939 cfs
C79B2	417 cfs	CP19B	126 cfs
C79A	1726 cfs	CP79A1	1093 cfs

4.3 Proposed Hydraulics

4.3.1 Street Hydraulics

Arterials and major collectors shall be designed to convey the peak flows generated by a 10-year peak storm within the roadway infrastructure with a spread limited to 1 traffic lane in each direction. All other public roadways shall be designed to convey the peak flows generated by a 10-year peak storm between the curbs. All roadways shall be designed to convey the 100-year storm within the right-of-way and adjacent parkway. Where the peak flows exceed the capacity of the public street to convey the peak flows, storm drains or other drainage facilities shall be installed and sized to carry the excess flows (i.e., when the 10-year peak exceeds the spread criteria or exceeds the curb capacity of the public street, or when the right-of-way cannot convey the 100-year peak). Storm drain and/or channel systems will convey stormwater runoff to retention basins located throughout the Site.

4.4 Retention

4.4.1 Retention Storage

The 100-year, 2-hour required retention volume for DU 8 & 9 was estimated to be 65.5 acre-feet based on conceptual land use. If actual land uses and required

retention volumes vary from this report updates to this report may be required to analyze impacts to downstream drainage infrastructure.

See *Table 5 – Proposed Condition Onsite Retention Volume Summary* in Appendix A for a detailed summary of required retention volumes per applicable watershed. Proposed DU 8 & 9 volumes are based on a 100-year, 2-hour precipitation depth of 2.19 inches obtained from NOAA Atlas 14 Precipitation Frequency Data. Retention basins will be required to dissipate stormwater within 36 hours.

Proposed channels adjacent to Signal Butte Road and Williams Field Road shall convey stormwater runoff produced within the roadway rights-of-way, combined with offsite flows east of the Site to drainage facilities downstream of Mesa Proving Grounds. The flow impacting the Site north of Ray Road will be conveyed in a channel southerly along Signal Butte and combined with the Powerline Floodway, then conveyed through the Site and discharged at Ray and Ellsworth Roads, as it does in the historical condition. The flow impacting the Site south of Ray Road will be conveyed in a channel southerly along Signal Butte, then westerly along Williams Field Road, and discharged to the existing channel on Pacific Proving Grounds, as it does in the historical condition.

Retention basins will be designed to drain after the storm event within 36 hours. Please refer to *Table 5 – Proposed Condition Onsite Retention Volume Summary* in Appendix B for detailed calculations of the retention volumes.

4.4.2 Stormwater Quality

The required retention storage volume for the Site exceeds the first flush requirement of storing the first one-half inch of runoff. All runoff will have settlement time within retention basins prior to draining by percolation, drywells, release into natural watercourses, and/or release into existing storm drain systems.

4.5 Maintenance

Ongoing maintenance of the designed or recommended drainage systems will be required to preserve the design integrity and purpose of the drainage system. Failure to provide

maintenance can prevent the drainage system from performing to its intended design purpose, and can result in reduced performance. Maintenance is the responsibility of private developers and owners associations for facilities on private property within all easements and private streets, except for drainage structures within public rights-of-way accepted by the City of Mesa for maintenance. Ownership and maintenance responsibilities will be associated with developments discharging to retention facilities and will be managed by the owners associations established for the Site. A regular maintenance program is required to have drainage systems perform to the level of protection or service as presented in this report.

5.0 CONCLUSIONS

Based on the analysis of the *Master Drainage Report for Development Units 8 & 9 at Mesa Proving Grounds*, the following conclusions can be made:

1. This *Master Drainage Report for Development Units 8 & 9 at Eastmark* is prepared in accordance with Wood, Patel & Associates, Inc.'s understanding of the drainage parameters set by the Flood Control District of Maricopa County, the City of Mesa, and the *Master Drainage Report for Eastmark.*

2. Offsite flows shall be conveyed around the Site adequately per jurisdictional requirements. FCDMC may require a review of this *DU8&9 Master Drainage Report.*

3. Peak flows for the proposed condition 100-year, 24-hour storm shall not negatively impact downstream drainage infrastructure.

4. Onsite retention shall be provided to retain runoff generated by the 100-year, 2-hour storm event for developed areas.

6. Flow in excess of onsite storage capacity shall outfall to emergency overflow routes.

7. Lowest floor elevations shall be set a minimum of 1 foot above the adjacent 100-year water surface elevation or emergency outfall water surface elevation, whichever is greater.

8. Drainage infrastructure will be designed in accordance with the appropriate criteria per the City of Mesa and/or Flood Control District of Maricopa County.

9. Ongoing maintenance is required for all drainage systems in order to assure design performance.

6.0 REFERENCES

1. *Master Drainage Report for Mesa Proving Grounds*, Wood, Patel and Associates, Inc., September 15, 2011.

2. *Drainage Design Manual for Maricopa, County, Arizona, Volumes 1 and 2*, Flood Control District of Maricopa County, 2011.

3. *Drainage Policies and Standards for Maricopa County*, Arizona, Flood Control District of Maricopa County, July, 2010.

4. *2009 Engineering & Design Standards,* City of Mesa, 2009.

5. *Flood Insurance Rate Map,* Federal Emergency Management Agency (FEMA), September 30, 2005.

6. *HEC-1 Flood Hydrograph Package,* US Army Corps of Engineers, June 1998.

7. *FlowMaster 2005*, Haestad Methods, Inc., 2004.

APPENDIX A

Proposed Condition Data and Hydrology

Hydrology Proposed Condition

100-Year, 24-Hour HEC-1 Output

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*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
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DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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  149          ID        DANIEL W. MATTHEWS, E.I.T.
  150          ID
  151          ID        FILE PATH:
  152          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
```

```
153          ID        PLAN\2ND SUBMITTAL\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
154          ID        MPG20RT2.DAT
155          ID
156          ID   **********************************************************************
157          ID
158          ID        FILE: MPG20RT2.DAT
159          ID
160          ID        MODEL REVISED: 01-08-08
161          ID
162          ID        PROJECT: MESA PROVING GROUNDS
163          ID
164          ID        MODEL REVISION DESCRIPTION:
165          ID
1                                        HEC-1 INPUT                                    PAGE   4

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

166          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
167          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
168          ID
169          ID
170          ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
171          ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
172          ID        BY SWABACK PARTNERS ON 12/12/07.
173          ID
174          ID
175          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
176          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  WATERSHEDS 68A, 68B,
177          ID        70A, 70B, 71, 73B, 73C, 74B, 74C, 75, 77B, 77C, 78B, 78C, AND 79A
178          ID        HAVE ALL BEEN UPDATED TO REFLECT CURRENT WATERSHED DELINEATIONS,
179          ID        NEW DEVELOPMENT, CURRENT RETENTION,AND FLOOD ROUTING.  BASIN 75
180          ID        HAS BEEN UPDATED TO REFLECT PLANNED DEVELOPEMENT FOR THE MESA
181          ID        PROVING GROUNDS SITE.
182          ID
183          ID        MODEL REVISED BY:
184          ID        WOOD, PATEL & ASSOCIATES, INC.
185          ID        DANIEL W. MATTHEWS, E.I.T.
186          ID
187          ID        FILE PATH:
188          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
189          ID        PLAN\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
190          ID        MPG20RT2.DAT
191          ID
192          ID   **********************************************************************
193          ID
194          ID
195          ID   ID  Kirkham Michael:
196          ID   Last Revised Date:  1/22/03
197          ID   Filename:  WS4-SEM.DAT
198          ID
199          ID   Comments Dated 1/22/03 (CJ)
200          ID
201          ID   This model should be used ONLY for the Rittenhouse and Chandler Heights
202          ID   Basin Design Project - Final Design Analyses.
203          ID
204          ID   This model is one of several models that represent the EMF watershed.
205          ID   This model covers the Southeast Mesa Area and should reference as a DSS
206          ID   the watershed model for the Northeast Mesa Area (Filename WS2-NEM.DAT).
207          ID
208          ID   This model is necessary to determine the input hydrographs for the
209          ID   Rittenhouse Basin Design HEC-RAS Unsteady State analysis.  To develop
210          ID   the necessary input hydrographs the following models should be run in order.
211          ID   Because the files utilize a TAPE21 file to export import hydrographs
212          ID   between models, prior to running the FIRST model (WS1-NWM.DAT) any existing
213          ID   TAPE21 file in the directory should be deleted.  The run procedure order is:
214          ID
215          ID        1)  WS1-NWM.DAT
216          ID        2)  WS2-NEM.DAT
217          ID        3)  WS3-QCSW.DAT
218          ID        4)  WS4-SEM.DAT (referencing WS2-NEM.DSS for the DSS file)
219          ID        5)  RT1-BASE.DAT
220          ID
1                                        HEC-1 INPUT                                    PAGE   5

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

221          ID   The necessary input hydrographs for the Rittenhouse Basin analysis
222          ID   are determined in RT1-BASE.  In that output file, the hydrograph at
223          ID   RWFLD1 should be exported and used as the input hydrograph at the
224          ID   ENF Reach 4 Cross Section 17.082.  And the hydrograph at RITTEN should
225          ID   be exported and used as the input hydrograph for the Rittenhouse Main
226          ID   Channel at Cross Section 820.00
227          ID
228          ID
229          ID   **********************************************************************
230          ID   **** NOTE BY PRIMATECH ENGINEERS:                                  ****
231          ID   **** DATE: 06/12/2001                                              ****
232          ID   **** THE NEW FILE NAME IS: SEBTALT2.DAT                           ****
233          ID   **** THE FILE WAS RENAMED AS <<RTBTALT2.DAT>> FOR THE EAST MARICOPA  ****
234          ID   **** FLOODWAY CAPACITY MITIGATION PROJECT, BY FLOOD CONTROL DISTRICT OF ****
235          ID   **** MARICOPA COUNTY.                                              ****
236          ID   **** THE FILE WAS RENAMED <<RTBTALT3.DAT>> AND UPDATED USING GREEN AND  ****
237          ID   **** AMPI FUTURE CONDITIONS FOR BASINS 258 TO 268.                 ****
238          ID   **********************************************************************
239          ID
240          ID
241          ID
242          ID    THIS MODEL WAS ORIGINALLY MIDDOUT.DAT
243          ID    IT HAS BEEN MODIFIED BY CPE (7/2000)
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244          ID     FOR ALTERNATIVE 2 FOR THE EAST MARICOPA FLOODWAY
245          ID     CAPACITY MITIGATION AND MULTI-USE CORRIDOR STUDY
246          ID     TO ROUTE BOTH THE POWERLINE FLOODWAY
247          ID     AND THE SANTAN FREEWAY CHANNEL INTO THE RAY BASIN PRIOR THEIR OUTFALL
248          ID     INTO THE EMF
249          ID
250          ID    ************************************************************
251          ID
252          ID          Model files changed by Collins/Pina Engineering
253          ID          to reflect multi-use design concepts (recreation
254          ID          and environment) proposed throughout the entire
255          ID          EMF Corridor.    July 2000
256          ID
257          ID
258          ID     VERSION 8.06  CPE 7/31/00
259          ID
260          ID    ************************************************************************
261          ID
262          ID
263          ID    ************************************************************************
264          ID     FILENAME: MIDDOUT.DAT
265          ID
266          ID     ALL CIP INFRASTRUCTURE IS IN PLACE, FUTURE CONDITIONS LANDUSE IS IN PLACE
267          ID     FLOW IS ROUTED UP ELLSWORTH ROAD IN A EARTH LINED CHANNEL
268          ID
269          ID    ************************************************************************
270          ID     PRODUCED BY DIBBLE AND ASSOCIATES AND HOSKIN ENGINEERING CONSULTANTS.
271          ID     File Name: Final8.Dat
272          ID     Revised - Jan. 2000 by SZ (Wood/Patel) from Final7.dat - new 2-V & Sideweir
273          ID     Revised - Jan. 2000 by SZ (Wood/Patel) from Final6.dat - 60% review comments
274          ID     Revised - Dec. 1999 by SZ (Wood/Patel) from Final5.dat
275          ID     Revised - Dec. 1999 by SZ (Wood/Patel) from Final4.dat
1                                        HEC-1 INPUT                                    PAGE  6

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

276          ID     Revised - Nov. 1999 by SZ (Wood/Patel) from final3.dat
277          ID     Revised - June 1999 by SZ (Wood/Patel) for Final Model from Opt1.dat.
278          ID     Revised - May 1999 by SZ (Wood/Patel) for Option 1, Based on Model SDIB.DAT
279          ID     REVISED - MAY, 1999 BY VAS TO INCORPORATE INCREASE OF SUBBASIN RETENTION AND
280          ID               REVISIONS TO THE REGIONAL DETENTION BASIN STORAGE
281          ID     REVISED - FEB, 1999 BY VALERIE SWICK, FCD OF MARICOPA COUNTY
282          ID     REVISED - MAY, 1998 BY D&A
283          ID
284          ID     REVISED BY VALERIE SWICK, FEB. 26, 1998
285          ID
286          ID     FLOWS FROM DETENTION BASIN LOCATED AT NE CORNER OF ELLIOT AND ELLSWORTH ROADS
287          ID     IS ROUTED TO THE SOUTHWEST BY SIPHON DRAW TO SUBBASIN 70A. FROM THERE THEY
288          ID     WILL BE ROUTED BY A CHANNEL TO THE EMF. FLOWS FROM SUBBASINS ADJACENT TO
289          ID     SANTAN FREEWAY ALIGNMENT WILL BE ROUTED SOUTH TO SUBBASIN 70A WHERE THEY WILL
290          ID     BE COMBINED WITH FLOW IN SIPHON DRAW.
291          ID
292          ID     EAST MESA AREA DRAINAGE MASTER PLAN
293          ID     AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
294          ID     AUGUST 1997
295          ID     SOUTHEAST MESA HIGH RESOLUTION MODEL
296          ID
297          ID     **********FUTURE CONDITION MODEL OF THE WATERSHED**********************
298          ID
299          ID    **********ATTENTION*************************************************
300          ID      SUBBASINS 75, 79A, 79B, 78E,  LANDUSES WERE NOT
301          ID      CHANGED BECAUSE IT WAS FELT THAT THEIR FUTURE CONDITIONS LANDUSES WOULD BE
302          ID      SIMILAR TO THE EXISTING CONDITIONS LANDUSES.
303          ID      RETENTION VOLUMES WILL ALSO NOT BE UTILIZED FOR SUBBASINS 75, 79A, 79B, 78E
304          ID      SOME QUEEN CREEK SUBBASINS WILL ALSO NOT HAVE RETENTION VOLUMES, EITHER
305          ID      BECAUSE THEY LIE IN PINAL COUNTY AND WE DONT KNOW PINAL COUNTIES PLANS OR
306          ID      THEY LIE IN THE SANTAN MOUNTAINS AND WON'T GET DEVELOPED
307          ID      WILLIAMS GATEWAY AIRPORT (SUBBASINS 80A, 80B, 81A, AND 81B) ARE MODELED AS
308          ID      FUTURE CONDITIONS AND HAVE RETENTION VOLUMES FOR THE 100YR 2HR STORM
309          ID    ************************************************************************
310          ID     FILENAME:  SD1BB.DAT
311          ID
312          ID     THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
313          ID     TOTAL DRAINAGE AREA IS APPROXIMATELY 213 SQ. MI.
314          ID     THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
315          ID     CONDITIONS.
316          ID
317          ID     100-YEAR 24-HOUR FREQUENCY
318          ID     AREAL REDUCTIONS FROM FCD HYDROLOGY MANUAL
319          ID     THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
320          ID     AND EAST OF THE CAP
321          ID
322          ID     DATA FROM THE QUEEN CREEK ADMS HAS BEEN ADDED TO CALCULATE FLOWS INTO THE
323          ID     EMF.   MUSKINGUM ROUTING NSTEPS WERE ADJUSTED TO BE WITHIN THE SUGGESTED
324          ID     RANGE.
325          ID
326          ID     METHODOLOGY
327          ID     THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
328          ID     SCS TYPE II RAINFALL DISTRIBUTION
329          ID     S-GRAPH HYDROGRAPH
330          ID     GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
1                                        HEC-1 INPUT                                    PAGE  7

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

331          ID     NORMAL DEPTH STORAGE CHANNEL ROUTING
332          ID     APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
333          ID     EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
334          ID     DATED 1994
```

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335           ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
336           ID
337           ID   ORIGINAL STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
338           ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
339           ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
340           ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
341           ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
342           ID
343           ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
344           ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
345           ID
346           ID   VELOCITIES FOR ADMP IMPROVEMENT CHANNELS FROM DIBBLE AND ASSOCIATES
347           ID   SUGGESTED ALTERNATIVES (JULY 1, 1997)
348           ID
349           ID   ********************************************************************
350           ID   **** THE FOLLOWING NOTE WAS ADDED BY PRIMATECH ENGINEERS ON 06-12-2001 ****
351           ID   ********************************************************************
352           ID   NOTE: MUST USE NEBUILD.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
353           ID         SUPERSTITION FREEWAY.
354           ID   ********************************************************************
355           ID
356           ID
357           ID   NOTE: MUST USE NDIBF.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
358           ID         SUPERSTITION FREEWAY.
359           ID
360           ID   DRM MCUHP2 SE MESA ADMP - SOUTH OF SUPERSTITION FWY, FUTURE CONDITIONS
              *DIAGRAM
361           IT       5  1APR97    0000     600
362           IO       5
363           IN      15
364           JD    3.60    0.01
365           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
366           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
367           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
368           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
369           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
370           PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
371           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
372           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
373           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
374           PC    .983    .986    .989    .992    .995    .998   1.000
375           JD    3.58     1.0
376           JD    3.49     5.0
377           JD    3.38    10.0
378           JD    3.24    30.0
379           JD    3.10    60.0
380           JD    3.05    90.0
381           JD    3.00   120.0
382           JD    2.97   150.0
              * ********************************************************************
              *
```



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

383           KK    SOSS
384           KM    INFLOW FROM SOSSAMAN BASIN VIA SOSSAMAN CHANNEL
385           KM    QI CARDS ARE BASED ON THE PEAK OF 1800CFS TO SOSSAMAN CHANNEL
386           BA    12.50
387           ZR  -QI A-SOSSAMAN DRAIN B-AT SUPERSTITION C=FLOW E=5MIN F-100YR
              *
              *

388           KK    RSOSS
389           KM    ROUTE FLOWS VIA SOSSAMAN CHANNEL TO BASELINE ROAD
390           RS       1    FLOW      -1
391           RC    .030    .025    .030    3500    .005
392           RX       0       5      10      35      75     110     115     120
393           RY      10      10      10       4       4      10      10      10
              *
              *

394           KK    59A
395           KM    BASIN 59A
396           KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
397           KM    L=       .9  Lca=       .3   S=   34.9  Kn= .070  LAG=  29.7
398           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
399           BA     .26
400           LG     .23     .25    4.55     .42   33.00
401           UI    30.     77.    144.    186.    246.    364.    293.    226.    172.    123.
402           UI    64.     48.     30.     15.      9.      9.      9.      0.      0.      0.
403           UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

404           KK    R59A
405           KM    RETAIN THE 100 YEAR 2 HOUR RUNOFF VOLUME
406           DT    D59A       2
407           DI       0   10000
408           DQ       0   10000
              *
              *

409           KK    C59A
410           KM    SOSSAMAN DRAIN AT BASELINE ROAD
411           HC       2
              *
              *
```

```
412          KK  59A59B
413          KM   ROUTE S59A TO S9B VIA SOSSAMAN CHANNEL
414          KM   BLOCK WALL ON LEFT BANK, SOSSAMAN ROAD ON RIGHT BANK
415          RS       2    FLOW       -1
416          RC    .025    .018     .013     6500    .0015
417          RX       0       3       13       38       78      103      128      203
418          RY      16      10       10        0        0       10        8       10
                  *
                  *
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

419          KK     59B
420          KM   BASIN S9B
421          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
422          KM    L=       1.2  Lca=        .7   S=   33.9  Kn= .087  LAG=  58.3
423          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
424          BA     .94
425          LG     .22     .24    4.65     .41   24.00
426          UI     54.     54.     93.     193.    244.    284.    318.    361.    415.    501.
427          UI    653.    666.    546.     473.    422.    364.    319.    273.    233.    172.
428          UI    110.     94.     89.      68.     54.     54.     19.     17.     17.     17.
429          UI     17.     17.     17.      17.      0.      0.      0.      0.      0.      0.
430          UI      0.      0.      0.       0.      0.      0.      0.      0.      0.      0.
                  *
                  *

431          KK    R59B
432          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
433          DT    D59B      63
434          DI       0   10000
435          DQ       0   10000
                  *
                  *

436          KK    C59B
437          KM   SOSSAMAN CHANNEL AT GUADALUPE ROAD
438          HC       2
                  *
                  *

439          KK  59BT60
440          KM     ROUTE S9B TO 60 GUADALUPE CHANNEL.
441          RS       6    FLOW       -1
442          RC     .02    .013     .02     5500    .0005
443          RX       0     518     522      522     560      560     580     2580
444          RY     8.5     8.5     8.5        0       0        8       7        6
                  *
                  *

445          KK      60
446          KM   BASIN 60
447          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
448          KM    L=       2.4  Lca=       1.4   S=   31.8  Kn= .087  LAG= 102.0
449          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
450          BA    2.30
451          LG     .18     .24    4.65     .43   35.00
452          UI     76.     76.     76.      76.    130.    250.    286.    330.    364.    395.
453          UI    422.    452.    484.     522.    571.    607.    689.    820.    915.   1008.
454          UI    885.    793.    723.     669.    626.    591.    536.    496.    459.    424.
455          UI    387.    362.    324.     276.    219.    169.    134.    134.    126.    125.
456          UI    121.     76.     76.      76.     76.     56.     23.     23.     23.     23.
457          UI     23.     23.     23.      23.     23.     23.     23.     23.     23.     23.
458          UI      0.      0.      0.       0.      0.      0.      0.      0.      0.      0.
459          UI      0.      0.      0.       0.      0.      0.      0.      0.      0.      0.
                  *
                  *
```



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

460          KK     R60
461          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
462          DT    D60      170
463          DI       0   10000
464          DQ       0   10000
                  *
                  *

465          KK  EMFGUA
466          KM     COMBINE S59 AND S60 AT EMF, GUADALUPE ROAD
467          KO                                      21
468          HC       2
                  *
                  *

469          KK  GUATEL
470          KM   ROUTE EMF FLOW FROM GUADALUPE ROAD TO ELLIOT ROAD
471          RS       3    FLOW       -1
472          RC     .03    .022     .03     6000    .0003
473          RX       0     500     520      553     693      726     740      742
474          RY      14      12      11        0       0       11      11       12
                  *
                  *
```

```
475      KK      64
476      KM    BASIN 64
477      KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
478      KM    L=      1.2  Lca=       .6   S=   25.4  Kn= .051  LAG-  34.4
479      KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
480      BA     .81
481      LG     .18     .25    4.70     .41   54.00
482      UI     79.    155.    338.    438.    543.    709.    988.    778.    624.    493.
483      UI    388.    253.    139.    120.     79.     45.     24.     24.     24.     24.
484      UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
485      UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
         *
         *

486      KK     R64
487      KM    R64 IS WHAT REMAINS AFTER THE DIVERSION OF FLOW UP TO 67 AC-FT. THIS IS SENT
488      KM    TO TAPE 21 FOR RECALL INTO FCD'S EMF MODELS.  KK BLOCK THERE MUST BE UPDATED
489      KM    TO REFLECT THE CHANGE OF WHAT GETS SENT TO THE TAPE 21.
490      KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
491      KO                                      21
492      DT     D64      67
493      DI       0   10000
494      DQ       0   10000
         *
         *
```

1 HEC-1 INPUT PAGE 11

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

495      KK  EMFELL
496      KM      COMBINE EMF FLOW WITH FLOW FROM SUBBASIN 64 AT ELLIOT ROAD
497      HC       2
         *
         *

498      KK  ELTWAR
499      KM    ROUTE EMF FLOW AT ELLIOT ROAD TO WARNER ROAD VIA THE EMF
500      RS       4    FLOW      -1
501      RC     .03    .022     .03    5500   .0003
502      RX       0     500     520     553     693     726     740     742
503      RY      14      12      11       0       0      11      11      12
         *
         *

504      KK     62A
505      KM    BASIN 62A
506      KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
507      KM     L=       .8  Lca=       .5   S=   30.0  Kn= .020  LAG-  10.2
508      KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
509      BA     .38
510      LG     .10     .25    4.50     .52   80.00
511      UI    335.   1057.   1010.    367.     93.     38.      0.      0.      0.      0.
512      UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
         *
         *

513      KK    R62A
514      KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
515      DT    D62A      33
516      DI       0   10000
517      DQ       0   10000
         *
         *

518      KK   62ATB
519      KM    ROUTE 62A TO 62B BY A CHANNEL ALONG BASELINE ROAD THROUGH SANTAN FWY
520      RS       1    FLOW      -1
521      RC    .030    .030    .030    1200    .002
522      RX       0     200     250     275     295     320     370     570
523      RY      10       8       7       0       0       7       8      10
         *
         *

524      KK     62B
525      KM    BASIN 62B
526      KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
527      KM     L=       .6  Lca=       .3   S-   47.5  Kn= .021  LAG-   8.0
528      KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
529      BA     .23
530      LG     .11     .25    4.65     .46   78.00
531      UI    334.    940.    431.     83.      0.      0.      0.      0.      0.      0.
532      UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
         *
         *
```

1 HEC-1 INPUT PAGE 12

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

533      KK    R62B
534      KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
535      DT    D62B      19
536      DI       0   10000
537      DQ       0   10000
         *
         *

538      KK    C62B
```

```
539          KM   COMBINE FLOW FROM BASIN 62A AND 62B
540          HC      2
             *
             *

541          KK   62BTD
542          KM   ROUTE 62B TO 62D VIA HAWES ROAD
543          RS      5    FLOW      -1
544          RC   .045     .04    .045    5280   .0041
545          RX      0     100     125     127     177     179     224     324
546          RY      3       2    1.50       0       0     1.5       2       3
             *
             *

547          KK    62D
548          KM   BASIN 62D
549          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
550          KM    L=        .9  Lca=        .3   S=   30.7  Kn= .045  LAG=  21.3
551          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
552          BA     .46
553          LG     .23      .25    4.65     .40   50.00
554          UI     76.     300.    519.    753.    475.    369.    286.    203.    163.    111.
555          UI     85.      63.     47.     36.     26.     14.     14.     14.     14.      0.
556          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
557          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

558          KK    R62D
559          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
560          DT    D62D      35
561          DI       0   10000
562          DQ       0   10000
             *
             *

563          KK   CP62D
564          KM   COMBINE FLOWS FROM SUBBASINS 62B AND 62D
565          HC      2
             *
             *
```

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

566          KK   62DTF
567          KM   ROUTE 62D TO 62F VIA HAWES ROAD
568          RS      9    FLOW      -1
569          RC   .045     .024    .045    3600   .0033
570          RX      0      500     750     753     793     796    1046    1546
571          RY      3      1.5    1.25       0       0    1.25     1.5       3
             *
             *

572          KK    62F
573          KM   BASIN 62F
574          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
575          KM    L=        .6  Lca=        .4   S=   31.9  Kn= .042  LAG=  18.1
576          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
577          BA     .26
578          LG     .21      .25    4.65     .41   54.00
579          UI     66.     224.    350.    546.    371.    235.     98.     56.     18.     15.
580          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
581          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

582          KK    R62F
583          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
584          DT    D62F      18
585          DI       0   10000
586          DQ       0   10000
             *
             *

587          KK   CP62F
588          KM   COMBINE FLOWS FROM 62D AND 62F
589          HC      2
             *
             *

590          KK   62T63
591          KM   ROUTE CP62F TO SUBBASIN 63 VIA WASH.
592          KM   WASH CROSSES HAWES, NORTH OF ELLIOT
593          RS      4    FLOW      -1
594          RC   .045     .04    .045    6000  0.0055
595          RX      0     500     750     770     780     800    1050    1550
596          RY      5       4       3       0       0       3       4       5
             *
             *

597          KK     63
598          KM   BASIN 63
599          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
600          KM    L=       1.4  Lca=        .7   S=   28.2  Kn= .035  LAG=  26.8
601          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
602          BA     .91
603          LG     .18      .25    4.65     .43   55.00
```

```
 604          UI   114.    346.    595.    780.   1159.   1291.    930.    689.    485.    241.
1                                          HEC-1 INPUT                                          PAGE 14

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

 605          UI   170.    113.     35.     35.     35.     35.      0.      0.      0.      0.
 606          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

 607          KK    R63
 608          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 609          DT    D63      71
 610          DI      0   10000
 611          DQ      0   10000
              *
              *

 612          KK    CP63
 613          KM   COMBINE FLOWS FROM SUBBASIN 63 AND CP62F
 614          HC      2
              *
              *

 615          KK   63T71
 616          KM   ROUTE CP63 TO S71 VIA SHEET FLOW
 617          KM   SOSSAMAN SOUTH OF ELLIOT
 618          RS     11    FLOW      -1
 619          RC   .055    .045    .055    5280   .0005
 620          RX      0    1000    1005    1010    1013    1043    1543    2043
 621          RY      6       5       0       0       3       5       2       5
              *
              *

 622          KK    68B1   BASIN
 623          KM   BASIN 68B1
 624          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 625          KM    L=0.75  Lca=0.38  S=32.3  Kn=0.030  LAG=13.9
 626          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 627          BA   0.146
 628          LG    0.10    0.25    5.20    0.36      80
 629          UI      68     206     374     269     135      48      17      11       0       0
 630          UI       0       0       0       0       0       0       0       0       0       0
              *

 631          KK    68B2   BASIN
 632          KM   BASIN 68B2
 633          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 634          KM    L=0.55  Lca=0.28  S=32.4  Kn=0.030  LAG=11.0
 635          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 636          BA   0.060
 637          LG    0.10    0.25    5.20    0.36      80
 638          UI      45     141     173      74      23       6       0       0       0       0
 639          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 15

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

 640          KK    68B3   BASIN
 641          KM   BASIN 68B3
 642          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 643          KM    L=0.36  Lca=0.18  S=32.2  Kn=0.030  LAG=7.9
 644          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 645          BA   0.036
 646          LG    0.10    0.25    5.20    0.36      80
 647          UI      52     148      63      12       0       0       0       0       0       0
 648          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 649          KK    CP68
 650          KM   COMBINE FLOWS FROM BASINS 68B1, 68B2, AND 68B3
 651          HC      3
              *
              *

 652          KK     R68
 653          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 654          DT    D68B      24
 655          DI       0   10000
 656          DQ       0   10000
              *
              *

 657          KK  68BT69
 658          KM   ROUTE S68B TO S69 VIA WASH CROSSING HAWES
 659          RS       4    FLOW      -1
 660          RC    .045     .04    .045    2750   .0036
 661          RX       0     500     950    1003    1007    1057    1511    2011
 662          RY       4     3.5       3       0       0       2     2.5       3
              *
              *

 663          KK      69
 664          KM   BASIN 69
 665          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 666          KM    L=       .7  Lca=       .3   S=   22.4  Kn= .020  LAG=   9.0
```

```
667          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
668          BA     .09
669          LG     .10     .25    4.70     .45   80.00
670          UI   104.    320.    213.     54.    11.      0.      0.      0.      0.      0.
671          UI     0.      0.      0.      0.     0.      0.      0.      0.      0.      0.
             *
             *

672          KK     R69
673          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
674          DT     D69      9
675          DI       0   10000
676          DQ       0   10000
             *
             *
```



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

677          KK     C69
678          KM   COMBINE FLOWS FROM SUBBASIN 68B AND 69
679          HC       2
             *
             *

680          KK   69T71
681          KM   ROUTE S69 TO S71 VIA WASH AND SHEET FLOW, INCREASE OVERBANK N VALUES
682          RS      11    FLOW      -1
683          RC    .055    .045    .055    6000   .0033
684          RX       0     500    1000    1001    1002    1500    2000    2500
685          RY       4       3       2       0       0       2       3       4
             *

686          KK      25   BASIN
687          KM   BASIN 25
688          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
689          KM    L=0.90  Lca=0.41  S=16.7  Kn=0.035  LAG=20.2
690          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
691          BA   0.208
692          LG    0.10    0.25    5.00    0.39      80
693          UI      40     151     225     371     334     221     139      60      37      11
694          UI      11      10       0       0       0       0       0       0       0       0
695          UI       0       0       0       0       0       0       0       0       0       0
696          UI       0       0       0       0       0       0       0       0       0       0
697          UI       0       0       0       0       0       0       0       0       0       0
             *

698          KK   RET25  DIVERT
699          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
700          DT   25RET    21.9     0.0
701          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
702          DQ     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
             *

703          KK   25T71   ROUTE
704          KM   ROUTE BASIN 25 TO BASIN 71 VIA WASH AND SHEET FLOW
705          RS      11    FLOW      -1
706          RC   0.045   0.040   0.045    5686  0.0050    0.00
707          RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
708          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
             *

709          KK      71
710          KM   BASIN 71
711          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
712          KM    L=     1.6  Lca=      .8   S=    26.4  Kn= .020  LAG=  16.8
713          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
714          KM    BASIN AREA UPDATED FROM 1.09 TO 0.861 BECAUSE AREA FOR BASIN 25 WAS REMOVED
715          KM    FROM BASIN 71
716          BA   0.861
717          LG     .10     .25    4.65     .47   80.00
718          UI    331.   1085.   1805.   2349.   1459.    780.    329.    144.     67.     67.
719          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```



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

720          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

721          KK     R71
722          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
723          KM   RETENTION VOLUME WAS REDUCED FROM 106 AC-FT TO 84.1 AC-FT BECAUSE 21.9 AC-FT
724          KM   WAS ACCOUNTED FOR IN RET25.
725          KM
726          DT     D71    84.1
727          DI       0   10000
728          DQ       0   10000
             *
             *

729          KK     C71
730          KM   COMBINE FLOWS FROM 63T71, 69T71, BASIN 71, AND BASIN 25
731          KM   CONCENTRATION POINT IS ALONG SOSSAMAN AT THE MESQUITE ST ALIGNMENT
732          HC       4
             *
             *
```

```
733          KK   71T72
734          KM   ROUTE C71 TO S72 VIA DIKE
735          KM    WASH WEST OF INTERSECTION OF SOSSAMAN & WARNER
736          RS       8    FLOW      -1
737          RC    .055    .045    .055    3750    .0037
738          RX       0     500    1000    1007    1017    1025    1530    2030
739          RY       9     8.5       8       0       0       8     8.5       9
             *
             *

740          KK      72
741          KM   BASIN 72
742          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
743          KM    L=      1.6  Lca=       .9   S=   13.1  Kn= .020  LAG=  20.3
744          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
745          BA     .84
746          LG     .10     .25    5.40     .33   80.00
747          UI    161.    600.    906.   1496.   1347.    912.    566.    247.    153.     50.
748          UI     43.     43.      0.      0.      0.      0.      0.      0.      0.      0.
749          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

750          KK     R72
751          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
752          DT     D72      83
753          DI       0   10000
754          DQ       0   10000
             *
             * CONCENTRATION POINT ADDED PRIOR TO EMF COMBINE SO THAT FLOWS CAN BE SENT TO
             * TAPE21.
             *
1                                        HEC-1 INPUT                                        PAGE 18

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

755          KK  CPKNOX
756          KO                                      21
757          HC       2
             *
             *

758          KK  EMFWAR
759          KM   COMBINE ROUTED FLOW FROM 71 WITH 72 WITH EMF (HYDROGRAPH ELTWAR)
760          HC       2
             *
             *

761          KK  WARTKN
762          KM   ROUTE EMF WARNER ROAD FLOW TO KNOX ROAD
763          RS       2    FLOW      -1
764          RC     .03    .022     .03    2500    .0003
765          RX       0     500     520     553     693     726     740     742
766          RY      14      12      11       0       0      11      11      12
             *
             *

767          KK      26   BASIN
768          KM   BASIN 26
769          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
770          KM    L=0.38  Lca=0.19  S=23.7  Kn=0.035  LAG=10.2
771          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
772          BA   0.045
773          LG    0.10    0.25    4.90    0.41      80
774          UI      40     127     122      44      11       4       0       0       0       0
775          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

776          KK   RET26  DIVERT
777          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
778          DT   26RET      4.8     0.0
779          DI       0   10000
780          DQ       0   10000
             *
             *

781          KK  26T70B   ROUTE
782          KM   ROUTE BASIN 26 TO BASIN 70B VIA WASH AND SHEET FLOW
783          RS       6    FLOW      -1
784          RC   0.045   0.040   0.045    4688  0.0057    0.00
785          RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
786          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
             *
             *
1                                        HEC-1 INPUT                                        PAGE 19

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

787          KK     70B
788          KM   BASIN 70B
789          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
790          KM    L=      1.6  Lca=       1.1   S=   29.9  Kn= .022  LAG=  20.7
791          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
792          KM    BASIN AREA UPDATED FROM 0.38 TO 0.335 BECAUSE AREA FOR BASIN 26 WAS REMOVED
793          KM    FROM BASIN 70B
```

```
794          BA    .335
795          LG     .11     .15    8.00     .12   76.00
796          UI     68.    259.    390.    636.    615.    418.    267.    119.     73.     30.
797          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
798          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

799          KK    R70B
800          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
801          KM   RETENTION VOLUME WAS REDUCED FROM 38 AC-FT TO 33.2 AC-FT BECAUSE 4.8 AC-FT
802          KM   WAS ACCOUNTED FOR IN RET26.
803          DT    D70B    33.2
804          DI       0   10000
805          DQ       0   10000
             *
             *

806          KK   CF70B
807          KM   COMBINE ROUTED FLOW FROM 26 AND 70B
808          HC       2
             *
             *

809          KK  70BT76
810          KM   ROUTE 70B TO 76B VIA WASH CROSSING SOSSAMAN, SOUTH OF WARNER ROAD
811          RS      11    FLOW      -1
812          RC    .045     .04    .045    5500   .0041
813          RX       0     500    1000    1003    1007    1011    1511    2011
814          RY       4     3.5       3       0       0       2     2.5       3
             *

815          KK     76B
816          KM   BASIN 76B
817          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
818          KM    L=      1.8  Lca=       .9   S=   27.4  Kn= .021  LAG=  18.9
819          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
820          BA     .64
821          LG     .10     .15    8.80     .09   78.00
822          UI    148.    515.    789.   1294.    957.    629.    303.    157.     70.     35.
823          UI     35.      0.      0.      0.      0.      0.      0.      0.      0.      0.
824          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
```



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

825          KK    R76B
826          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
827          DT    D76B      66
828          DI       0   10000
829          DQ       0   10000
             *

830          KK    KNOX
831          KM   COMBINE FLOWS AT KNOX ROAD
832          KO                                21
833          HC       2
             *

834          KK  EMFKNX
835          KM   COMBINE FLOWS INTO THE EMF AT KNOX ROAD
836          KM   THIS COMBINES HYDROGRAPHS WARIKN, 70BT76 and R76B.
837          HC       2
             *
             *

838          KK  KNXTRY
839          KM   ROUTE EMF KNOX ROAD FLOW TO RAY ROAD
840          RS       2    FLOW      -1
841          RC     .03    .022     .03    3000   .0003
842          RX       0     500     520     553     693     726     740     742
843          RY      14      12      11       0       0      11      11      12
             *
             *

844          KK     65A
845          KM   BASIN 65A
846          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
847          KM    L=      1.6  Lca=       .9   S=   51.2  Kn= .053  LAG=  41.5
848          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
849          BA    2.54
850          LG     .15     .25    5.10     .35   59.00
851          UI    206.    248.    735.   1001.   1188.   1423.   1760.   2487.   2309.   1835.
852          UI   1546.   1269.   1035.    777.    497.    351.    292.    206.    143.     63.
853          UI     63.     63.     63.     63.      0.      0.      0.      0.      0.      0.
854          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *

855          KK    R65A
856          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
857          DT    D65A     174
858          DI       0   10000
859          DQ       0   10000
             *
             *
```

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

  860     KK   CAP1A
  861     KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
  862     KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
  863     KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS.
  864     BA     6.4
  865     ZR  =QI A=CAP1A B-OVERCHUTE C-FLOW E-5MIN F=100YEAR
          * IN    60
          * BA   .01
          * QI     0      65     217     217     217     217     217     217     217     2
          * QI   217     217     217     217     217     217     217     217     217     2
          * QI   217     217     217     217     217
          *
          *

  866     KK  RCAP1A
  867     KM   ROUTE FLOW FROM CAP OVERCHUTE TO A POINT ON THE MARICOPA/PINAL COUNTY LINE
  868     KM   2000 FEET NORTH OF THE GUADALUPE ROAD COUNTY LINE INTERSECTION. ROUTING WIL
  869     KM   BE BY A NATURAL CHANNEL.  THIS IS THEN ROUTED FOR 1200 FT
  870     KM   IN A CHANNEL (DIBBLE ID MN3) TO THE POINT WERE THE ROUTED CAP1B FLOW
  871     KM   INTERCEPTS THE CHANNEL. ORIGINAL SLOPE =.01
  872     RS      3    FLOW      -1
  873     RC    .045     .04     .045    4900     .010
  874     RX       0     500     1000    1006     1026    1032    1511    2011
  875     RY       4     3.5        3       0        0       3     3.5       4
          *
          *

  876     KK  RRCP1A
  877     KM   REACH MN-5 AND CULVERT MNC-1
  878     KM   ROUTE FLOW FROM WHERE RCAP1A FLOWS INTO THE NEW CHANNEL ALONG MERIDIAN ROAD
  879     KM   USES REVISED ROUTING PARAMETERS, CHANNEL MN-5 SHAPE
  880     RS       1    FLOW      -1
  881     RC   0.025   0.015   0.025    2350    .0017
  882     RX       0       8      16      27      43      53      61      69
  883     RY     5.1     5.2     5.3       0       0     5.3     5.2     5.1
          *
          *

  884     KK   CAP1B
  885     KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
  886     KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
  887     KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS.
  888     BA     6.4
  889     ZW  =QI  A=CAP1B  B=OVERCHUTE  C-FLOW  E-5MIN F-100YEAR
          * IN    60
          * BA   .01
          * QI     0      65     217     217     217     217     217     217     217     2
          * QI   217     217     217     217     217     217     217     217     217     2
          * QI   217     217     217     217     217
          *
          *

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

  890     KK  RCAP1B
  891     KM   ROUTE FLOW FROM CAP1B OVERCHUTE TO A POINT ALONG THE MARICOPA/PINAL COUNTY
  892     KM   LINE 1000 FEET NORTH OF THE INTERSECTION OF GUADALUPE ROAD AND THE COUNTY
  893     KM   LINE. ROUTING WILL BE BY A NATURAL CHANNEL. ORIGINAL SLOPE-.01
  894     RS       1    FLOW      -1
  895     RC    .045     .04     .045    4900     .010
  896     RX       0     500     1000    1006     1026    1032    1511    2011
  897     RY       4     3.5        3       0        0       3     3.5       4
          *
          *

  898     KK   C65A1
  899     KM   COMBINE FLOWS FROM SUBBASIN 65A(EAST OF MERIDIAN RD) AND CAP1A AND CAP1B
  900     HC       3
          *
          *

  901     KK  65ATB1
  902     KM   REACH MN-4, MN-3B AND MN-3A
  903     KM   ROUTE FLOW FROM BASIN 65A TO OFF-LINE DETENTION BASIN DIVERSION STRUCTURE
  904     KM   USES REVISED ROUTING PARAMETERS, CHANNEL MN-3A SHAPE.
  905     RS       1    FLOW      -1
  906     RC   0.025   0.015   0.025    3760    .0015
  907     RX     0.0     8.0    16.0      34      56      74      82      90
  908     RY     8.8     8.9     9.0       0       0     9.0     8.9     8.8
          *
          *

  909     KK  DIDB65
  910     KM   DETENTION BASIN DIVERSION STRUCTURE
  911     KM   DIVERT FLOW FROM CHANNEL TO OFF-LINE BASIN
          * KO     2       2
  912     DT   DB65A
  913     DI       0     100     434     582     854    1206    1624    2096    3188
  914     DQ       0       0       0     148     420     772    1190    1662    2754
          *
          *

  915     KK  65B1T2
  916     KM   REACH MN-2
```

```
917          KM   ROUTE FLOW FROM BASIN DIVERSION STRUCTURE TO BASIN OUTLET
918          RS       1    FLOW      -1        0
919          RC    .025    .015    .025      700    .0019
920          RX     0.0     8.0    16.0       25       35       44       52       60
921          RY     8.7     8.8     4.5        0        0      4.5      8.8      8.7
             *
             *

922          KK  DIB65D
923          KM         RETURN DIVERT TO DETENTION BASIN
924          DR   DB65A
             *
             *
```



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

925          KK   DB65A
926          KM   SIPHON DRAW BASIN
927          KM   OFF-LINE DETENTION BASIN LOCATED AT ELLIOT AND MERIDIAN ROAD
928          KM   WITH  36" OUTLET PIPE AND 235' WEIR
             * KO     2       2
929          RS       1    STOR       0
930          SA       0    4.67   15.05   27.12   37.88   42.12
931          SE      90      91      93      95      97      98
932          SL    91.5    7.07     .62      .5
933          SS    97.0     235     2.5     1.5
             *
             *

934          KK   C65A2
935          KM   RECOMBINE FLOWS FROM DETENTION BASIN AND SUNLAND SPRINGS CHANNEL.
936          HC       2
             *
             *

937          KK  65AT-1
938          KM   REACH MK-1
939          KM   ROUTE FROM DETENTION BASIN OUTLET TO ELLIOT ROAD AND MERIDIAN ROAD
940          KM   CONCRETE CHANNEL ON EAST SIDE OF MERIDIAN ROAD ALGN.
941          RS       1    FLOW      -1
942          RC    .025    .015    .025     630    .0014
943          RX       0       8      16       26       38       48       56       64
944          RY     4.7     4.8     4.9        0        0      4.9      4.8      4.7
             *
             *

945          KK  65AT-2
946          KM   REACH ET-10, ET-11, ET-12 plus culverts ETC-4 AND ETC-3.
947          KM   ROUTE FROM ELLIOT AND MERIDIAN, ALONG ELLIOT ROAD IN ELLIOT CHANNEL
948          KM   TO ABOUT 0.6 MILES EAST OF CRISMON ROAD.
949          KM   EARTH CHANNEL PORTION ON NORTH SIDE OF ELLIOT
             * KO     1
950          RS       4    FLOW      -1
951          RC    .025    .025    .025    7680    .0005
952          RX       0       8      22      58      71     107     115     123
953          RY     6.1     6.0     5.9       0       0     5.9     6.0     6.1
             *
             *

954          KK    65AW
955          KM   BASIN 65AW
956          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
957          KM    L=       .9  Lca=      .6   S=   54.7  Km= .049  LAG=  26.1
958          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
959          BA     .43
960          LG     .24     .25    5.30     .29   32.00
961          UI     56.    176.    295.    391.    603.    594.    432.    316.    210.    101.
962          UI     73.     43.     17.     17.     17.      0.      0.      0.      0.      0.
963          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *
```



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

964          KK   R65AW
965          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
966          DT   D65AW      31
967          DI       0   10000
968          DQ       0   10000
             *
             *

969          KK  65AT65
970          KM    ROUTE C65A TO BASIN 65B VIA A WASH, (THIS WASH IS NORTH OF SIPHON DRAW)
971          KM    THIS IS THE PART OF 65A WHICH IS WEST OF THE MERIDIAN RD ALIGNMENT
             * KO     3
972          RS      11    FLOW      -1
973          RC    .045     .04    .045    9500    .007
974          RX       0     500    1000    1003    1053    1056    1511    2011
975          RY       4     3.5       3       0       0       2     2.5       3
             *
             *

976          KK    65B
977          KM   BASIN 65B
```

```
978           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
979           KM    L=      2.0  Lca=      1.2   S=   37.5  Kn= .036  LAG=  36.6
980           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
981           BA    1.37
982           LG     .18     .25    6.00     .24   53.00
983           UI    126.    218.    506.    669.    809.   1014.   1468.   1422.   1102.    901.
984           UI    720.    562.    337.    218.    182.    126.     71.     39.     39.     39.
985           UI     39.      0.      0.      0.      0.      0.      0.      0.      0.      0.
986           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

987           KK    R65B
988           KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
989           DT    D65B     120
990           DI       0   10000
991           DQ       0   10000
              *
              *

992           KK    CP65B
              * KO      1
993           KM    COMBINE FLOW FROM SUBBASIN 65AW (WEST OF MERIDIAN RD) WITH FLOW FROM
994           KM    SUBBASIN 65B
995           HC       2
              *
              *
```

1 HEC-1 INPUT PAGE 25

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

996           KK    DI65B
997           KM          DIVERSION STRUCTURE TO ROUTE PEAK FLOW TO NEW
998           KM          ELLIOT BASIN (EAST)
999           KM          By-pass 30 cfs to Elliot Channel, and Divert Remaining to E Basin
              *         The Existing Model By-pass 51 cfs. SZ, 5-17-99
1000          DT  DIRS65
1001          DI       0     15.0       30    100.0      200    350.0      500      700      900    1500.
1002          DQ       0        0        0     70.0      170    320.0      470      670      870    1470.
              *
              *

1003          KK    CP65A
1004          KM    COMBINE FLOWS FROM ELLIOT CHANNEL AT NON DIVERTED FLOWS (51CFS) FROM
1005          KM    SUBBASIN 65B
1006          HC       2
              *
              *

1007          KK  65AT-3
              * KM REACH ET-9 plus culvert ETC-2
              * KM ROUTE FROM ABOUT 0.6 MILES EAST OF CRISMON ROAD
              * KM   TO ABOUT 0.18 MILES EAST OF CRISMON ROAD (CP65)
              * KM CONCRETE CHANNEL PORTION ON SOUTH SIDE OF ELLIOT
              * RD  2340  0.0019   0.013            CIRC     7.5
1008          KM         E. 104th St to E. of EA (Sta. 83+10 to Sta. 90+50)
              *        RD card used for routing
1009          RD     740  0.0064   0.012            CIRC     6.5
              *
              *

1010          KK    DR65B
              * KO      1
1011          KM         RETURN DIVERT TO EAST DETENTION BASIN
1012          DR  DIRS65
              *
              *

1013          KK    RS65A
1014          KM    ELLIOT BASIN, EAST
1015          KM          Bleed-off Pipe Size - 12", SZ, 5-17-99
              *         Since the bleed-off pipe length is short, no routing is provided.
              *         The Existing Pipe Size - 24"
              * KO      1
1016          RS       1    STOR       0
1017          SV       0    5.40    9.30   13.90   18.80   24.00   29.50   35.30   41.40   48.00
1018          SE  1429.0  1433.0  1434.0  1435.0  1436.0  1437.0  1438.0  1439.0  1440.0  1441.0
1019          SL  1430.0  0.7854     .62      .5
1020          SS  1439.0     200     2.5     1.5
              *
              *
```

1 HEC-1 INPUT PAGE 26

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

1021          KK     CP65
              *        "CP65B" changed to "CP65" -- SZ, 5-14, 1999
1022          KM    COMBINE FLOWS FROM EAST ELLIOT BASIN AND ELLIOT CHANNEL
1023          KM    BEFORE COMBINING WITH FLOWS FROM THE BYPASS CRISMON CHANNEL
              * KO      1
1024          HC       2
              *
              *

1025          KK    65T66
              * KM REACH ET-8
              * KM ROUTING IN ELLIOT CHANNEL FROM ABOUT
```

```
                * KM   0.18 MILES EAST OF CRISMON ROAD (CP65) TO CRISMON ROAD (CP66).
                *       Moved from "65AT-3" to here
1026            KM        E. of EA to W. of EA (Sta. 76+06 to Sta. 83+10)
                *       RD card used for routing
                * RD   940  0.0060   0.013            CIRC     9.5
1027            RD     704  0.0064   0.012            CIRC     7.5
                *
                *

1028            KK  65T66A
1029            KM        W. of EA to E. of Crismon Rd. (Sta. 69+00 to Sta. 76+06)
                *       New additional routing operation
                *       RD card used for routing
1030            RD     706  0.0047   0.012            CIRC     7.5
                *
                *

1031            KK  65T66B
1032            KM        E. of Crismon Rd.to W. of Crismon Rd. (Sta. 61+25 to Sta. 69+00)
                *       New additional routing operation
                *       RD card used for routing
1033            RD     775  0.0048   0.012            CIRC     9.5
                *
                *

1034            KK  ADOT-E
1035            KM   INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY ENTERING 67A
1036            KM   FROM EAST ADOT DETENTION BASIN 4105.
                *     KO       1
1037            BA    0.01
1038            ZR  -QI A-ADOT EAST BASIN B-AT SUPERSTITION C-FLOW E-5MIN F-100YR
                *
                *

1039            KK  AET67A
1040            KM    ROUTE SUPERSTITION FLOW THROUGH 67A TO BASELINE ROAD
1041            IN      15
1042            RS       3    FLOW      -1
1043            RC    .045    .040    .045    5500    .010
1044            RX       0     100     110     120     130     140     150     250
1045            RY       5       4       3       1       1       3       4       5
                *
                *
1                                          HEC-1 INPUT                                    PAGE 27

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


1046            KK     67A
1047            KM   BASIN 67A
1048            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1049            KM    L=      1.0  Lca=       .7   S=   42.9  Kn= .042  LAG=  25.7
1050            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1051            BA     .30
1052            LG     .21     .25    4.70     .39   43.00
1053            UI     39.    126.    208.    277.    433.    400.    292.    213.    134.     67.
1054            UI     47.     25.     12.     12.     12.      0.      0.      0.      0.      0.
1055            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

1056            KK    R67A
1057            KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1058            DI    D67A      21
1059            DI       0   10000
1060            DQ       0   10000
                *
                *

1061            KK    C67A
1062            KM    COMBINE FLOWS FROM ADOT-E AND SUBBASIN 67A
1063            HC       2
                *
                *

1064            KK   67ATC
1065            KM   ROUTE 67A TO 67C VIA WASH CROSSING BASELINE
1066            RS       4    FLOW      -1
1067            RC    .055    .045    .055    6300    .0071
1068            RX       0     500     980    1003    1007    1031    1511    2011
1069            RY       4     3.5       3       0       0       3     3.5       4
                *
                *

1070            KK    SUP2
1071            KM   INFLOW FROM NORTH OF SUPERSTITION FREEWAY, DISCHARGING INTO 67B
                *     KO       1
1072            BA    0.01
1073            ZR  =QI A=ADOT WEST BASIN B-AT SUPERSTITION C-FLOW E-5MIN F-100YR
                *
                *

1074            KK   RSUP2
1075            KM   ROUTE SUP2 THROUGH SUBBASIN 67B
                * KO              2
1076            IN      15
1077            RS      11    FLOW      -1
1078            RC    .045    .045    .045    4500    .0056
1079            RX       0     500    1000    1003    1007    1011    1511    2011
```

```
1080          RY       4     3.5       3       0       0       2     2.5       3
              *
              *
```



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

1081          KK     67B
1082          KM    BASIN 67B
1083          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1084          KM     L=       1.2  Lca=        .9   S=    28.0  Kn= .034  LAG=  26.4
1085          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1086          BA      .53
1087          LG      .17      .25     4.90      .38    56.00
1088          UI     68.     210.     356.     470.     713.     741.     536.     395.     269.     131.
1089          UI     94.      59.      21.      21.      21.       0.       0.       0.       0.       0.
1090          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

1091          KK     R67B
1092          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1093          DT     D67B      41
1094          DI        0   10000
1095          DQ        0   10000
              *
              *

1096          KK     C67B
1097          KM    COMBINE FLOWS FROM SUP2 AND SUBBASIN 67B
              * KO               2
1098          HC        2
              *
              *

1099          KK    67BTC
1100          KM    REACH CN-4, CN-5 plus culvert CNC-4.
1101          KM    ROUTE FLOW IN THE CRISMON CHANNEL FROM BASELINE ROAD (C67B) TO
1102          KM       GUADALUPE ROAD (C67C)
1103          RS        2    FLOW       -1
1104          RC     .025     .015     .025     5180    .0019
1105          RX        0        8       16     24.4     36.4     44.8     52.8     60.8
1106          RY      4.0      4.1      4.2        0        0      4.2      4.1      4.0
              *
              *

1107          KK     67C
1108          KM    BASIN 67C
1109          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1110          KM     L=       1.2  Lca=        .7   S=    40.2  Kn= .049  LAG=  32.3
1111          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1112          BA      .93
1113          LG      .25      .25     5.10      .32    31.00
1114          UI     96.     213.     432.     557.     702.    1006.    1133.     842.     667.     518.
1115          UI    365.     193.     157.      96.      59.      30.      30.      30.      30.       0.
1116          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
1117          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *
```



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

1118          KK     R67C
1119          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1120          DT     D67C      67
1121          DI        0   10000
1122          DQ        0   10000
              *
              *

1123          KK     C67C
1124          KM    COMBINE SUBBASINS 67C AND 67A AND 67B
1125          HC        3
              *
              *

1126          KK   67CT67
1127          KM    REACH CN-3 plus culvert CNC-3
1128          KM    ROUTE FLOW IN THE CRISMON CHANNEL FROM C67C (@ GUADALUPE ROAD & CRISMON ROAD)
1129          KM     TO C67D (AT APPROX. 1/2 MILE SOUTH OF GUADALUPE ROAD).
              *       Sta. 39+00 to Guadalupe Rd.
1130          RS        1    FLOW       -1
1131          RC     .025     .015     .025     2420    .0018
1132          RX        0        6       12       24       64       76       82       88
1133          RY        4        3        2        0        0        2        3        4
              *
              *

1134          KK     67D
1135          KM    BASIN 67D
1136          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1137          KM     L=        .6  Lca=        .4   S=    34.7  Kn= .050  LAG=  20.5
1138          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1139          BA      .13
1140          LG      .25      .25     5.20      .30    30.00
1141          UI     23.      87.     132.     216.     202.     137.      86.      38.      23.       9.
```

```
1142          UI     6.     6.     0.     0.     0.     0.     0.     0.     0.     0.
1143          UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
              *
              *

1144          KK    R67D
1145          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1146          DI    D67D       9
1147          DI       0   10000
1148          DQ       0   10000
              *
              *

1149          KK    C67D
1150          KM    COMBINE HYDROGRAPHS AT CP67D
1151          HC       2
              *
              *
```

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

1152          KK  67DI66
1153          KM   REACH CN-2 plus culvert CNC-2
1154          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM APPROX. 1/2 MILE SOUTH
1155          KM    OF GUADALUPE ROAD TO THE INFLOW SPILLWAY FOR THE ELLIOT DETENTION BASIN.
              *      Sta. 20+00 to Sta. 39+00
1156          RS       1    FLOW      -1
1157          RC    .032    .032    .032    1900  0.0035
1158          RX       0       6      12      24      64      76      82      88
1159          RY       4       3       2       0       0       2       3       4
              *
              *

1160          KK     66A
1161          KM    BASIN 66A
1162          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1163          KM     L=       .7  Lca=       .3   S=   55.9  Kn= .047  LAG=  17.1
1164          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1165          BA      .26
1166          LG      .24     .25    6.00     .22   35.00
1167          UI      78.    256.    417.    576.    363.    209.     84.     39.     16.     16.
1168          UI       0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1169          UI       0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1170          KK     R66A
1171          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1172          DI     D66A      21
1173          DI       0   10000
1174          DQ       0   10000
              *
              *

1175          KK    66AIB
1176          KM    ROUTE S66A TO 66B VIA WASH CROSSING BASELINE
1177          RS       9    FLOW      -1
1178          RC    .045     .04    .045    7500   .0077
1179          RX       0     500     980    1003    1007    1031    1511    2011
1180          RY       4     3.5       3       0       0       3     3.5       4
              *
              *

1181          KK     66B
1182          KM    BASIN 66B
1183          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1184          KM     L=      1.6  Lca=      1.0   S=   43.3  Kn= .050  LAG=  42.8
1185          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1186          BA      .67
1187          LG      .25     .25    5.00     .33   30.00
1188          UI      53.     56.    185.    246.    297.    352.    426.    590.    636.    496.
1189          UI     419.    346.    286.    232.    152.     93.     86.     58.     53.     21.
1190          UI      16.     16.     16.     16.     16.      0.      0.      0.      0.      0.
1191          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
```

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

1192          KK     R66B
1193          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1194          DI     D66B      48
1195          DI       0   10000
1196          DQ       0   10000
              *
              *

1197          KK    CP66B
1198          KM    COMBINE S66A AND S66B
1199          HC       2
              *
              *

1200          KK    66BIC
1201          KM    ROUTE 66B TO 66C VIA WASH
```

```
1202          RS       4    FLOW      -1
1203          RC    .045     .04    .045    6000    .0150
1204          RX       0     500     995    1003     1007    1016    1511    2011
1205          RY       4     3.5       3       0        0       3     3.5       4
              *
              *

1206          KK     66C
1207          KM   BASIN 66C
1208          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1209          KM    L=      1.1  Lca=        .7   S=   46.5  Kn= .039  LAG=  24.3
1210          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1211          BA     .50
1212          LG     .19     .25    5.40     .29   48.00
1213          UI     69.    243.    385.    528.    817.    635.    463.    325.    159.    103.
1214          UI     63.     21.     21.     21.      0.      0.      0.      0.      0.      0.
1215          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1216          KK    R66C
1217          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1218          DT    D66C      42
1219          DI       0   10000
1220          DQ       0   10000
              *
              *

1221          KK  CP66C1
1222          KM   Split up hydrograph combination in order to separate flows.
1223          KM   Combine Hydrographs 66BTC (from Sub. 66A)and R66C (from Sub. 66C)
              * KO      2       2
1224          HC       2
              *
              *
```



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


1225          KK  CP66C2
1226          KM   Combine Hydrograph CP66C1 (from Subbasins 66A, 66B and 66C)
1227          KM     plus hydrograph 67DT66 ( C67D )
              * KO      1
1228          HC       2
              *
              *

1229          KK    DI66
1230          KM    DIVERT FLOW TO DETENTION BASIN WA
1231          KM    By-pass Flow Reduced to 410 cfs from 458, SZ, 5-17-99
              * KO      1       2
1232          DT    DB66
1233          DI       0     150     363   411.0   456.0     513     577     643     712    1000
1234          DQ       0       0       0    32.0     71.     122     179     239     302     590
              *
              *

1235          KK  66C1T2
1236          KM    ROUTE FLOW FROM DIVERSION STRUCTURE TO ELLIOT CHANNEL at ELLIOT ROAD.
1237          KM    REACH CN-1 plus culvert CNC-1
1238          KM        A single pipe size and an overall slope are used to represent this
1239          KM        1,070 ft long reach which has pipe sizes of 78", 84" and 90", and
1240          KM        about 250' long sidewair and transition open channel.
1241          KM        RD card used for routing (Sta. 9+30 to Sta. 20+00)
1242          RD    1070  0.0130   0.012             CIRC       7
              *
              *

1243          KK   CP66C
1244          KM   COMBINE FLOWS FROM ELLIOT CHANNEL AND CRISMON BYPASS CHANNEL
              * KO      1
1245          HC       2
              *
              *

1246          KK   66CID
              * KM REACH ET-7
1247          KM   ROUTE FLOWS FROM INTERSECTION OF CRISMON AND ELLIOT CHANNELS
1248          KM      AT THE INTERSECTION OF ELLIOT ROAD and CRISMON ROAD TO THE ELLIOT BASIN
1249          KM      WA Bleed-off Outlet, WHICH IS ABOUT 390 fL WEST OF CRISMON ROAD.
              *       RD card used for routing (Sta. 57+35 to Sta. 61+25)
1250          RD     390  0.0052   0.012             CIRC     9.5
              *
              *

1251          KK    DR66
              * KO      1
1252          KM          RETURN DIVERT TO DETENTION BASIN FROM DIVERSION STRUCTURE
1253          DR    DB66
              *
              *
```



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


1254          KK  RS66D1
              * KO      1
```

```
1255          KM   ELLIOT BASIN, WEST A
1256          KM   TWO PONDS OPERATING IN SERIES.
1257          KM        Bottom Elevation Lowered to 1415.0 ft from 1420, and 18" Bleed-off
1258          KM        Pipe Added from WA to Elliot Channel
              *       Since the bleed-off pipe length is short, no routing is provided.
              *       Existing SS - 1423   20   2.5   1.5, SZ, 5-18-99
1259          RS        1    STOR       0
1260          SV        0    1.60   10.00   25.50   34.70   44.20   54.10   64.40   75.10   86.00
1261          SE   1415.0    1417    1419    1421    1422    1423    1424    1425    1426    1427
1262          SL   1416.0  1.7672     .62      .5
1263          SS   1423.5      20     3.0     1.5
              *
              *

1264          KK    B-WA
1265          KM        Bleed-off Flow from WA to Elliot Channel - 18" Pipe, SZ, 6-15-99
1266          KM        Divert Flow to WB by Weir Spillover (SS card on RS66D1)
              *       RS66D1 is the total routed flow - SL + SS
              *       This operation is designed to separate weir flow from pipe flow
1267          DT    D-WB
1268          DI       0       5      10      15   17.59   40.87   80.62  131.76  192.12  260.43
1269          DQ       0       0       0       0       0    21.2    60.0   110.2   169.7   237.2
              *
              *

1270          KK    C-WA
1271          KM        Combine Bleed-off Flow from WA with Flow in Elliot Channel
              *       Added by SZ, 5-17-99
1272          HC        2
              *
              *

1273          KK   RC-WA
1274          KM        Route Flow from WA Outlet to WB Outlet in Elliot Channel
              *       Added by SZ, 5-17-99
              * RS      1    FLOW      -1
              * RC   .025    .015    .025     800   .0017
              * RX      0       8      16      28      44      56      64      72
              * RY    5.7     5.8     6.0       0       0     6.0     5.8     5.7
1275          KM      WA Bleed-off Outlet to WB Bleed-off Outlet.
              *       RD card used for routing (Sta. 48+80 to Sta. 57+35)
1276          RD     855  0.0052   0.012             CIRC     9.5
              *
              *

1277          KK   DR-WA
1278          KM        Return Diverted Flow (Spillway) to WB from WA, SZ 5-7-99
              * KO      1
1279          DR    D-WB
              *
              *
```



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

1280          KK  RS66D2
              * KO      1
1281          KM   ELLIOT BASIN, WEST B
1282          KM   TWO PONDS OPERATING IN SERIES.
1283          KM        Bottom Elevation Lowered to 1413.5 ft from 1414, and 36" Bleed-off
1284          KM        Pipe Reduced to 18" from WB to Elliot Channel
              *       Since the bleed-off pipe length is short, no routing is provided.
              *       Existing SS - 1420.5   80   2.5   1.5, SZ, 5-18-99
1285          RS        1    STOR       0
1286          SV        0    4.40    8.80   14.50   21.00   28.00   35.30   42.90   50.90   59.20
1287          SE   1412.0    1415    1416    1417    1418    1419    1420    1421    1422    1423
1288          SL   1413.0  1.7672     .62      .5
1289          SS   1422.6      50     2.5     1.5
              *
              *

1290          KK   CP66D
1291          KM        COMBINE FLOWS FROM WEST ELLIOT BASIN AND ELLIOT CHANNEL
1292          KM        AT THE OUTLET PIPE.
              * KO      1
1293          HC        2
              *
              *

1294          KK  66T66D
              * KM REACH ET-6
1295          KM        ROUTE FROM DETENTION BASIN WB OUTLET TO ELLSWORTH RD
1296          KM        2350 -> 3200,  SZ, 5-17-99
              *       First portion
              *       RD card used for routing (Sta. 36+44 to 48+80)
1297          RD     1236  0.0052   0.012             CIRC     9.5
              *
              *

1298          KK  66-66D
              * KM REACH ET-6
1299          KM        ROUTE FROM DETENTION BASIN WB OUTLET TO ELLSWORTH RD
1300          KM        2350 -> 3200,  SZ, 5-17-99
              *       Second portion
              *       RD card used for routing (Sta. 12+46 to Sta. 36+44)
1301          RD     2398  0.0040   0.012             CIRC     9.5
              *
              *
```

```
1302          KK     66D
1303          KM    BASIN 66D
1304          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1305          KM     L=      1.0  Lca=        .7   S=    28.6  Kn= .020  LAG=  13.2
1306          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1307          BA      .31
1308          LG      .10      .17     6.80      .19    80.00
1309          UI     162.     480.     845.     540.     232.      89.      24.       0.       0.       0.
1310          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *
1                                        HEC-1 INPUT                                                        PAGE 35

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


1311          KK     R66D
1312          KM    RETENTION REDUCED BY 77% FROM 31 TO 7 AC-FT
1313          KM    DUE TO DEVELOPMENT USING DETENTION BASIN
              *    The developer does not participate in the basin so the retention volume
              *    increased to 31 A-F
1314          DT     D66D       31
1315          DI        0    10000
1316          DQ        0    10000
              *
              *


1317          KK      61A
1318          KM    BASIN 61A
1319          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1320          KM     L=       .9  Lca=        .4   S=    36.8  Kn= .037  LAG=  19.1
1321          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1322          BA      .52
1323          LG      .19      .25     4.20      .56    52.00
1324          UI     117.     412.     628.    1037.     786.     517.     261.     132.      62.      28.
1325          UI      28.       0.       0.       0.       0.       0.       0.       0.       0.       0.
1326          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *


1327          KK     R61A
1328          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1329          DT     D61A       42
1330          DI        0    10000
1331          DQ        0    10000
              *
              *


1332          KK     61ATB
1333          KM    ROUTING 61A TO 61B VIA ELLSWORTH ROAD
1334          RS       10     FLOW       -1
1335          RC     .035     .024     .035     5280     .005
1336          RX        0      500      750      752      802      852     1102     1602
1337          RY        3        2      1.5      1.2      1.2      1.5        2        3
              *
              *


1338          KK      61B
1339          KM    BASIN 61B
1340          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1341          KM     L=      1.4  Lca=        .7   S=    39.7  Kn= .047  LAG=  33.6
1342          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1343          BA     1.09
1344          LG      .24      .25     4.80      .37    35.00
1345          UI     109.     223.     475.     615.     765.    1049.    1335.    1025.     822.     643.
1346          UI     495.     288.     187.     143.     109.      36.      34.      34.      34.      34.
1347          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
1348          UI       0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *
1                                        HEC-1 INPUT                                                        PAGE 36

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


1349          KK     R61B
1350          KM    RETAIN 100 YR 2 HR RUNOFF VOLUME
1351          DT     D61B       81
1352          DI        0    10000
1353          DQ        0    10000
              *
              *


1354          KK     CP61B
1355          KM    COMBINE FLOWS FROM S61A AND S61B
1356          HC        2
              *
              *


1357          KK    61T66D
1358          KM    ROUTE CP61B TO SUBBASIN 66D ALONG ELLSWORTH ROAD. ROUTING WILL BE
1359          KM    THE SAME AS WAS GIVEN FOR SUBBASIN 61A
1360          RS        9     FLOW       -1
1361          RC     .035     .024     .035     5280     .008
1362          RX        0      500      750      752      802      852     1102     1602
1363          RY        3        2      1.5      1.2      1.2      1.5        2        3
              *
              *
```

```
1364          KK     67E
1365          KM   BASIN 67E
1366          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1367          KM    L=      1.2  Lca=       .7   S=   32.3  Kn= .038  LAG=  26.9
1368          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1369          BA     .58
1370          LG     .19     .25    5.40     .30   50.00
1371          UI     73.    219.    378.    496.    732.    830.    597.    443.    315.    157.
1372          UI    110.     73.     24.     22.     22.     22.      0.      0.      0.      0.
1373          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1374          KK    R67E
1375          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1376          KM   DUE TO DEVELOPMENT USING DETENTION BASIN
1377          DT    D67E      50
1378          DI       0   10000
1379          DQ       0   10000
              *
              *

1380          KK    C67E
1381          KM   COMBINE FLOWS FROM ELLSWORTH ROAD JUST NORTH OF ELLIOT ROAD
1382          HC       2
              *
              *
1                                        HEC-1 INPUT                                        PAGE 37

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

1383          KK    C66D
1384          KM   COMBINE ELLIOT CHANNEL FLOW WITH HYDROGRAPH C67E @ ELLIOT RD & ELLSWORTH RD.
1385          HC       3
              *
              *

1386          KK  66T23A
1387          KM    NAME WAS CHANGED FROM 66T70A TO 66T23A
1388          KM       Pipe Routing, Reach ET-5
              *      SE corner curve of Elliot Rd. & Ellsworth Rd.
              *      RD card used for routing (Junction Structure to Sta. 12+46)
1389          RD     253  0.0015   0.012            CIRC     9.5
              *
              *

1390          KK  66T23B
1391          KM    NAME WAS CHANGED FROM 66T70B TO 66T23B
1392          KM       Pipe Routing, Reach ET-5
              *      Elliot Rd. to Culvert along Ellsworth Rd. 2-102" pipe = 144" pipe
              *      RD card used for routing (Sta. 85+65 to Sta. 97+51)
1393          RD    1186  0.0015   0.012            CIRC      12
              *
              *

1394          KK   CULVT
1395          KM       Pipe Routing, Culvert
              *      2-102" pipe culvert crossing Ellsworth Rd.
              *      RD card used for routing
1396          RD     196  0.0008   0.012            CIRC      12
              *
              *
              * KK66T70C
              * KM REACH ET-4, ET-5( COMPRISED OF ET-5A AND ET-5B).
              * KM ROUTE FROM ELLSWORTH Culvert TO SANTAN FREEWAY.
              * RS      2    FLOW      -1
              * RC  .032    .032    .032    2490    .0008
              * RX     0      10      20      56      76     112     120     130
              * RY   6.2     6.1     6.0       0       0     6.0     6.1     6.2
              *
              *

1397          KK  66T23C
1398          KM   ROUTE ELLIOT STORM DRAIN FLOW SOUTH TO MESQUITE ROAD ALIGNMENT ALONG THE
1399          KM   WEST SIDE OF ELLSWORTH ROAD VIA ENGINEERED CHANNEL.
1400          RS       1    FLOW      -1
1401          RC    .032    .032    .032    1000    .0021
1402          RX       0       5      10      46      56      92      97     102
1403          RY      10     9.5       9       0       0       9     9.5      10
              *
              *  ********************************UPDATED MPG PLANNING **********************
              *  ********************************DWM 09/07/2011**********************************
              *
1                                        HEC-1 INPUT                                        PAGE 38

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

1404          KK      04   BASIN
1405          KM    BASIN 04
1406          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1407          KM    L=1.39  Lca=0.44  S=22.3  Kn=0.033  LAG=21.9
1408          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1409          BA   0.309
1410          LG    0.13    0.15    8.80    0.08      68
1411          UI       0      48     191     287     437     533     361     251     127      73
1412          UI      41      15      15      15       0       0       0       0       0       0
```

```
1413          UI       0       0       0       0       0       0       0       0       0       0
1414          UI       0       0       0       0       0       0       0       0       0       0
1415          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1416          KK   RET04  DIVERT
1417          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO      2
1418          DT   04RET    30.4     0.0
1419          DI       0   10000
1420          DQ       0   10000
              *
              *

1421          KK    CP23
1422          KM   COMBINE FLOW FROM 66T23C AND BASIN 04.
              * KO      2
1423          HC       2
              *
              *

1424          KK  66T23D
1425          KM   ROUTE ELLIOT STORM DRAIN FLOW WEST TO LOOP 202 EAST CHANNEL ALONG THE NORTH
1426          KM   SIDE OF THE MESQUITE ROAD ALIGNMENT VIA ENGINEERED CHANNEL.
1427          RS       1    FLOW      -1
1428          RC    .032    .032    .032    2300    .0021
1429          RX       0       5      10      46      56      92      97     102
1430          RY      10     9.5       9       0       0       9     9.5      10
              *
              *

1431          KK     62C
1432          KM   BASIN 62C
1433          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1434          KM    L=        .6  Lca=        .3   S=   24.2  Kn= .049  LAG=  19.8
1435          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1436          BA     .55
1437          LG     .23     .25    4.65     .40   47.00
1438          UI    112.    406.    615.   1024.    853.    571.    330.    154.     83.     28.
1439          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1440          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
```



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

1441          KK    R62C
1442          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1443          DT    D62C      31
1444          DI       0   10000
1445          DQ       0   10000
              *
              *

1446          KK   62CTE
1447          KM   ROUTE BASIN 62C TO BASIN 62E BY CHANNEL ON EAST SIDE OF PROPOSED SANTAN
1448          KM   FREEWAY ALIGNMENT
1449          RS       3    FLOW      -1
1450          RC    .030    .030    .030    2000    .0003
1451          RX       0       5      10      25      45      55      60      65
1452          RY       8       7     6.5       0       0     6.5       7       8
              *
              *

1453          KK     62E
1454          KM   BASIN 62E
1455          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1456          KM    L=        .6  Lca=        .3   S=   31.9  Kn= .050  LAG=  20.4
1457          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1458          BA     .15
1459          LG     .25     .25    4.65     .39   45.00
1460          UI     29.    108.    163.    268.    246.    167.    104.     46.     28.     10.
1461          UI      8.      8.      0.      0.      0.      0.      0.      0.      0.      0.
1462          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1463          KK    R62E
1464          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1465          DT    D62E      12
1466          DI       0   10000
1467          DQ       0   10000
              *
              *

1468          KK   CP62E
1469          KM   COMBINE FLOWS FROM SUBBASIN 62C AND SUBBASIN 62E
1470          HC       2
              *
              *

1471          KK  62T68A
1472          KM   ROUTE FLOW FROM CP62E TO SUBBASIN 68A BY CHANNEL ALONG PROPOSED ALIGNMENT
1473          KM   OF THE SANTAN FREEWAY
              * ZW    A-62T68A    B-NORTH OF ELLIOT  C-FLOW    F-100YR FUTURE
1474          RS       5    FLOW      -1
```

```
1475          RC    .030    .030    .030    3280  .00015
1476          RX       0       5      10      20      30      40      45      50
1477          RY      20      15      15       0       0      15      15      20
              *
              *
              * BASIN 68A WAS SEPERATED INTO 2 BASINS TO CALCULATE OFFSITE FLOW IMPACTS
              * TO BASIN 23.
              *
              * KK   68A
              * KM BASIN 68A
              * KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
              * KM  L=       .7  Lca=       .4   S=   37.7  Kn= .032  LAG=  13.7
              * KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
              * BA   .35
              * LG   .16     .25    5.70     .27   66.00
              * UI  168.    506.    914.    635.    301.    114.     34.     26.      0.
              * UI    0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                          HEC-1 INPUT                                          PAGE 40

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


1478          KK    68A1   BASIN
1479          KM   BASIN 68A1
1480          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1481          KM    L=0.92  Lca=0.46  S=37.7  Kn=0.030  LAG=15.6
1482          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1483          BA   0.297
1484          LG    0.16    0.25    5.70    0.27       3
1485          UI     106     340     612     604     368     151      73      20      20       0
1486          UI       0       0       0       0       0       0       0       0       0       0
              *

1487          KK    68A2   BASIN
1488          KM   BASIN 68A2
1489          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1490          KM    L=0.50  Lca=0.25  S=37.8  Kn=0.030  LAG=9.8
1491          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1492          BA   0.048
1493          LG    0.16    0.25    5.70    0.27      80
1494          UI      46     147     124      41       9       0       0       0       0       0
1495          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1496          KK  CP68A1
1497          KM   COMBINE FLOWS FROM BASINS 68A1 AND 68A2
1498          HC       2
              *
              *

1499          KK    R68A
1500          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1501          DI    D68A      31
1502          DI       0   10000
1503          DQ       0   10000
              *
              *

1504          KK  CP68A2
1505          KM   COMBINE FLOW FROM BASINS 68A1 AND 68A2 WITH THE ROUTED FLOW FROM CP62E
              * KO       3       2
              * ZW  A=COMBINED FLOW, CP68A  B=FROM BASIN AND ROUTE  C FLOW   F-100YR FUTURE
1506          HC       2
              *
              *

1507          KK  68T70A
1508          KM   ROUTE FLOW FROM CP68A AT ELLIOT AND SANTAN FREEWAY ALIGNMENT TO SUBBASIN
1509          KM   70A, AT THE POINT WHERE SIPHON DRAW INTERSECTS THE FREEWAY ALIGNMENT
1510          KM   CHANNEL IS NATURAL AND ONLY APPROXIMATE IN ROUTING PARAMETERS
1511          RS       5    FLOW      -1
1512          RC    .030    .030    .030    3960   .0006
1513          RX       0       5      10      20      30      40      45      50
1514          RY      10       5       4       0       0       4       5      10
              *
              *
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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10


1515          KK    70A1   BASIN
1516          KM   BASIN 70A1
1517          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1518          KM    L=0.52  Lca=0.26  S=3.8  Kn=0.030  LAG=15.7
1519          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1520          BA   0.053
1521          LG    0.10    0.25    5.70    0.29      80
1522          UI      18      61     106     110      65      29      13       3       4       0
1523          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1524          KK      23   BASIN
1525          KM   BASIN 23
1526          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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```
1527          KM    L=0.78  Lca=0.36  S=17.9  Kn=0.036  LAG=18.5
1528          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1529          BA   0.218
1530          LG    0.10     0.21     6.40     0.22      76
1531          UI      53      183      283      450      325      206       93       51       19       12
1532          UI      12        0        0        0        0        0        0        0        0        0
1533          UI       0        0        0        0        0        0        0        0        0        0
              *
              *

1534          KK   RET23  DIVERT
1535          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1536          DT   23RET    22.7      0.0
1537          DI       0   10000
1538          DQ       0   10000
              *
              *

1539          KK   C70A1
1540          KM   COMBINE FLOWS FROM 68T70A, 66T23D, BASIN 70A1, AND BASIN 23.
              * KO      2
1541          HC       4
              *
              *

1542          KK  70A1T2
1543          KM   ROUTE FLOW ALONG LOOP 202 WITHIN THE EAST CHANNEL FROM MESQUITE ROAD TO
1544          KM   WARNER ROAD.
1545          RS       2    FLOW      -1
1546          RC    .025     .025     .025     2675  0.0005
1547          RX       0        8       16       59       91      134      142      150
1548          RY     7.4      7.3      7.2        0        0      7.2      7.1      7.0
              *
              *

1                                        HEC-1 INPUT                                        PAGE 42

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

1549          KK      24   BASIN
1550          KM   BASIN 24
1551          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1552          KM    L=0.83  Lca=0.38  S=24.1  Kn=0.035  LAG=17.8
1553          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1554          BA   0.252
1555          LG    0.10     0.15     8.80     0.09      79
1556          UI      67      229      357      538      359      221       91       51       14       15
1557          UI       0        0        0        0        0        0        0        0        0        0
              *
              *

1558          KK   RET24  DIVERT
1559          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1560          DT   24RET    26.5      0.0
1561          DI       0   10000
1562          DQ       0   10000
              *
              *

1563          KK    70A2   BASIN
1564          KM   BASIN 70A2
1565          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1566          KM    L=0.51  Lca=0.28  S=19.6  Kn=0.030  LAG=11.4
1567          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1568          BA   0.036
1569          LG    0.10     0.15     8.40     0.10      80
1570          UI      25       77      106       49       15        4        0        0        0        0
1571          UI       0        0        0        0        0        0        0        0        0        0
              *
              *

1572          KK  CP70A2
1573          KM   COMBINE FLOWS FROM 70A1T2 AND BASINS 24 AND 70A2
1574          KM
1575          HC       3
              *
              *

1576          KK  70T76A
1577          KM   DIBBLE DRAINAGE FACILITY
1578          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT
1579          KM   REACH ET-3A, ET-3B
1580          RS       4    FLOW      -1
1581          RC    .025     .025     .025     4500  0.0005
1582          RX       0        8       16       59       91      134      142      150
1583          RY     7.4      7.3      7.2        0        0      7.2      7.1      7.0
              *
              *

1                                        HEC-1 INPUT                                        PAGE 43

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

1584          KK      76A
1585          KM   BASIN 76A
1586          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1587          KM    L=      2.9  Lca=      1.7   S=   24.1  Kn= .030  LAG=  42.9
1588          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1589          BA    1.91
```

```
1590          LG     .15     .15    8.80     .08   56.00
1591          UI   150.    159.    528.    707.    847.   1004.   1213.   1673.   1826.   1424.
1592          UI  1201.    992.    822.    667.    444.    266.    247.    171.    150.     65.
1593          UI    46.     46.     46.     46.     46.      0.      0.      0.      0.      0.
1594          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1595          KK    R76A
1596          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1597          DT    D76A     185
1598          DI       0   10000
1599          DQ       0   10000
              *
              *

1600          KK    C76A
1601          KM    COMBINE HYDROGRAPHS 70T76A (SANTAN FREEWAY CHANNEL FLOWS) WITH SUBBASIN 76A
              * KO      2
1602          HC       2
              *
              * KK*DBSAN
              * KM DIVERT FROM SANTAN CHANNEL INTO THE RAY DETENTION BASIN
              * KM ADDED BY CPE IN JUNE 2000.
              * KM USES A REALISTIC SIDE-WEIR EQUATION TO FORM POWER CURVE
              * KM WEIR CREST = 4.5 FT; WEIR LENGTH = 200FT; 4.0 FT DIV STRUCTURE.
              * KO      3
              * DT SANDB     1537
              * DI       0     750     772     819     892     999    1356    8138
              * DQ       0       0       7      31      78     154     439    6509
              *
              *

1603          KK  76ATPR
1604          KM   DIBBLE DRAINAGE FACILITY
1605          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT TO NEW POWERLINE FLOODWAY ALGN.
1606          KM   REACH ET-2A, ET-2B
1607          RS       5    FLOW      -1
1608          RC    .025    .025    .025    5750  0.0005
1609          RX       0       8      16      61      93     138     146     154
1610          RY     7.7     7.6     7.5       0       0     7.5     7.4     7.3
              *
              *
```



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

1611          KK     73A
1612          KM   BASIN 73A
1613          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1614          KM    L=      2.3  Lca=      1.0   S=   34.9  Kn= .093  LAG=  94.5
1615          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1616          BA     .95
1617          LG     .35     .36    5.00     .27     .00
1618          UI    34.     34.     34.     34.     84.    117.    134.    158.    171.    185.
1619          UI   197.    214.    232.    254.    274.    317.    381.    429.    424.    369.
1620          UI   332.    303.    282.    263.    240.    220.    202.    185.    169.    157.
1621          UI   134.    107.     90.     60.     60.     57.     55.     54.     34.     34.
1622          UI    34.     34.     16.     10.     10.     10.     10.     10.     10.     10.
1623          UI    10.     10.     10.     10.     10.     10.      0.      0.      0.      0.
1624          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1625          KK   73ATB   ROUTE
1626          KM   ROUTE FLOW FROM BASIN 73A THROUGH THE MOUNTAIN HEIGHTS DEVELOPEMENT FROM
1627          KM   MERIDIAN ROAD TO MOUNTAIN ROAD.
1628          RS       2    FLOW      -1
1629          RC   0.045   0.040   0.045    2830  0.0050    0.00
1630          RX    0.00    5.00   10.00   20.00  120.00  130.00  135.00  140.00
1631          RY    4.00    3.00    2.50    0.00    0.00    2.50    3.00    4.00
              *
              *

1632          KK     73B   BASIN
1633          KM   BASIN 73B
1634          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1635          KM    L=0.56  Lca=0.28  S=30.4  Kn=0.040  LAG=14.9
1636          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1637          BA   0.425
1638          LG    0.25    0.25    5.40    0.27      30
1639          UI     169     530     973     829     481     180      73      30       0       0
1640          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1641          KK  RET73B  DIVERT
1642          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1643          DT  73BRET    39.5     0.0
1644          DI       0   10000
1645          DQ       0   10000
              *
              *

1646          KK   CP73B COMBINE
1647          KM   COMBINE HYDROGRAPHS 73ATB AND BASIN 73B
1648          HC       2
              *
```

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                 *
1                                    HEC-1 INPUT                                         PAGE 45

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


 1649            KK    73BTC    ROUTE
 1650            KM    ROUTE FLOW THROUGH THE NOVA VISTA DEVELOPEMENT FROM MOUNTAIN ROAD TO
 1651            KM    SIGNAL BUTTE ROAD.
 1652            RS        4     FLOW       -1
 1653            RC    0.045    0.040    0.045     4500  0.0050     0.00
 1654            RX     0.00     5.00    10.00    22.00  122.00  134.00  139.00  144.00
 1655            RY     4.00     3.50     3.00     0.00    0.00    3.00    3.50    4.00
                 *
                 *

 1656            KK      73C    BASIN
 1657            KM    BASIN 73C
 1658            KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1659            KM     L=1.33  Lca=0.30  S=22.6  Kn=0.040  LAG=22.5
 1660            KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1661            BA    0.585
 1662            LG     0.25     0.25     5.40     0.27      30
 1663            UI       88      344      512      764    1019     695     488     287     149      88
 1664            UI       31       27       26        0       0       0       0       0       0       0
 1665            UI        0        0        0        0       0       0       0       0       0       0
                 *
                 *

 1666            KK  RET73C  DIVERT
 1667            KM    RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
 1668            DT   73CRET     37.2      0.0
 1669            DI        0    10000
 1670            DQ        0    10000
                 *
                 *

 1671            KK    CP73C COMBINE
 1672            KM    COMBINE HYDROGRAPHS 73BTC AND BASIN 73C
 1673            HC        2
                 *
                 *  *************UPDATED CHANNEL SECTION*****************************************
                 *  *****************DWM 09/07/2011*********************************************
                 *  6:1 SS EAST BANK, 3:1 SS WEST BANK, 38FT BOTTOM, 3.5 FT DEEP
                 *

 1674            KK   73T74C    ROUTE
 1675            KM    ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN
 1676            KM    ENGINEERED CHANNEL FROM WARNER ROAD TO THE POWERLINE FLOODWAY.
 1677            RS       20     FLOW       -1
 1678            RC    0.032    0.032    0.032     4670   .0024
 1679            RX        0        5       10       31      69    79.5    84.5    89.5
 1680            RY      3.5      3.5      3.5        0       0     3.5     3.5     3.5
                 *
                 * ******************************************************************************
                 *
1                                    HEC-1 INPUT                                         PAGE 46

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


 1681            KK      74A
 1682            KM    BASIN 74A
 1683            KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1684            KM     L=      2.4  Lca=      1.0   S=    42.2  Kn= .095  LAG=   92.9
 1685            KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                 * KO      2        2
 1686            BA      .75
 1687            LG      .35      .36     5.00      .27     .00
 1688            UI      27.      27.      27.      27.     73.     96.    111.    129.    140.    151.
 1689            UI     163.     175.     193.     208.    228.    268.    317.    362.    327.    287.
 1690            UI     260.     239.     222.     206.    187.    171.    160.    142.    132.    118.
 1691            UI      99.      79.      56.      48.     47.     45.     45.     32.     27.     27.
 1692            UI      27.      19.       8.       8.      8.      8.      8.      8.      8.      8.
 1693            UI       8.       8.       8.       8.      8.      0.      0.      0.      0.      0.
 1694            UI       0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                 *
                 *

 1695            KK    74ATB    ROUTE
 1696            KM    ROUTE FLOW FROM BASIN 74A VIA THE POWERLINE FLOODWAY FROM MERIDIAN ROAD TO
 1697            KM    MOUNTAIN ROAD. FLOW ENTERS THE POWERLINE FLOODWAY VIA A 75FT WEIR ON THE
 1698            KM    NORTHWEST CORNER OF THE MERIDIAN ROAD AND POWERLINE FLOODWAY INTERSECTION.
 1699            RS        1     FLOW       -1
 1700            RC    0.013    0.013    0.013     3200  0.0060     0.00
 1701            RX     0.00     7.00    21.50    30.00   36.00   44.50   59.00   66.00
 1702            RY     6.00     5.50     5.50     0.00    0.00    5.50    5.50    6.00
                 *
                 *

 1703            KK      74B    BASIN
 1704            KM    BASIN 74B
 1705            KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1706            KM     L=1.31  Lca=0.41  S=23.7  Kn=0.040  LAG=24.9
 1707            KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1708            BA    0.333
 1709            LG     0.25     0.25     5.80     0.22      30
 1710            UI       45      154      245      330     528     430     318     229     122      76
 1711            UI       44       18       14       14       0       0       0       0       0       0
```

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1712          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1713          KK  RET74B  DIVERT
1714          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1715          DT  74BRET    17.8      0.0
1716          DI       0   10000
1717          DQ       0   10000
              *
              *
```



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

1718          KK   CP74B COMBINE
1719          KM   COMBINE HYDROGRAPHS 74ATB AND BASIN 74B
1720          HC       2
              *
              *

1721          KK   74BTC    ROUTE
1722          KM   ROUTE FLOW VIA THE POWERLINE FLOODWAY FROM MOUNTAIN ROAD TO SIGNAL BUTTE
1723          KM   ROAD.
1724          RS       1    FLOW      -1
1725          RC   0.013   0.013   0.013    3100  0.0055    0.00
1726          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
1727          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
              *
              *

1728          KK     74C   BASIN
1729          KM   BASIN 74C
1730          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1731          KM    L=1.22  Lca=0.40  S=25.4  Kn=0.040  LAG=23.7
1732          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1733          BA   0.345
1734          LG    0.25    0.17    6.80    0.15      30
1735          UI      48     180     276     386     588     428     310     211      97      65
1736          UI      35      15      15      16       0       0       0       0       0       0
1737          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1738          KK  RET74C  DIVERT
1739          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1740          DT  74CRET    22.6      0.0
1741          DI       0   10000
1742          DQ       0   10000
              *

1743          KK   CP74C COMBINE
1744          KM   COMBINE HYDROGRAPHS 73T74C, 74BTC, AND BASIN 74C
              * KO      2
1745          HC       3
              *
              *  ***********************************UPDATED MPG PLANNING **********************
              *  ***********************************DWM 09/07/2011**************************
              *

1746          KK  74CT10
1747          KM  ROUTE FLOW FROM IN THE POWERLINE FLOODWAY FROM CP74C TO CP10
1748          RS       2    FLOW      -1
1749          RC   0.030   0.013   0.030    4250   .0036
1750          RX       0      15    16.5      25      33    41.5      43      58
1751          RY     6.6     6.6     5.6       0       0     5.6     6.6     6.6
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.....10

1752          KK      10   BASIN
1753          KM    BASIN 10
1754          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1755          KM    L=1.01  Lca=0.56  S=20.8  Kn=0.045  LAG=29.3
1756          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1757          BA   0.171
1758          LG    0.25    0.19    6.60    0.17      31
1759          UI       0      20      52      95     123     165     239     187     144     109
1760          UI      75      38      29      20       7       6       6       6       0       0
1761          UI       0       0       0       0       0       0       0       0       0       0
1762          UI       0       0       0       0       0       0       0       0       0       0
1763          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1764          KK   RET10  DIVERT
1765          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1766          DT   10RET    12.7      0.0
1767          DI       0   10000
1768          DQ       0   10000
              *

1769          KK    CP10
1770          KM    COMBINE HYDROGRAPHS 74CT10 AND RET10
1771          HC       2
```

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                 *
                 *
1772             KK   10T11
1773             KM  ROUTE FLOW FROM IN THE POWERLINE FLOODWAY FROM CP10 TO CP11
1774             RS       1    FLOW     -1
1775             RC   0.030   0.013   0.030    1080   .0060
1776             RX       0      15    16.5      26      34    43.5      45      60
1777             RY     7.3     7.3     6.3       0       0     6.3     7.3     7.3
                 *
                 *

1778             KK      11   BASIN
1779             KM    BASIN 11
1780             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1781             KM    L=0.25  Lca=0.11  S=20.0  Kn=0.031  LAG=6.4
1782             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1783             BA   0.061
1784             LG    0.21    0.25    4.20    0.54      53
1785             UI       0     134     275      55       0       0       0       0       0       0
1786             UI       0       0       0       0       0       0       0       0       0       0
1787             UI       0       0       0       0       0       0       0       0       0       0
1788             UI       0       0       0       0       0       0       0       0       0       0
1789             UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
1                                            HEC-1 INPUT                                                PAGE 49

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


1790             KK   RET11  DIVERT
1791             KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1792             DT   11RET     5.1     0.0
1793             DI       0   10000
1794             DQ       0   10000
                 *
                 *

1795             KK    CP11
1796             KM    COMBINE HYDROGRAPHS 10T11 AND RET11
1797             HC       2
                 *
                 *

1798             KK   11T75
1799             KM  ROUTE FLOW FROM IN THE POWERLINE FLOODWAY FROM CP11 TO CP75
1800             RS       1    FLOW     -1
1801             RC   0.030   0.013   0.030    5250   .0056
1802             RX       0      15    16.5      26      34    43.5      45      60
1803             RY     7.3     7.3     6.3       0       0     6.3     7.3     7.3
                 *
                 *

1804             KK     02B   BASIN
1805             KM    BASIN 02B
1806             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1807             KM    L=0.53  Lca=0.26  S=28.3  Kn=0.040  LAG=14.4
1808             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1809             BA   0.242
1810             LG    0.15    0.25    5.40    0.30      56
1811             UI       0     104     319     589     460     251      88      35      17       0
1812             UI       0       0       0       0       0       0       0       0       0       0
1813             UI       0       0       0       0       0       0       0       0       0       0
1814             UI       0       0       0       0       0       0       0       0       0       0
1815             UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

1816             KK  RET02B  DIVERT
1817             KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
1818             DT  02BRET    22.7       0
1819             DI       0   10000
1820             DQ       0   10000
                 *
                 *

1821             KK    2BT1   ROUTE
1822             KM  ROUTE FLOW IN EXCESS OF THE 100-YEAR, 2-HR STORM OVERLAND TO
1823             KM  GOLF COURSE IN SUBBASIN 1
1824             RS       1    FLOW     -1
1825             RC   0.032   0.032   0.032      50  0.0050
1826             RX    0.00       1       2       3    2003    2004    2005    2006
1827             RY    1.00    0.75    0.50    0.00    0.00    0.50    0.75    1.00
                 *
                 *
1                                            HEC-1 INPUT                                                PAGE 50

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


1828             KK      01   BASIN
1829             KM    BASIN 01
1830             KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1831             KM    L=0.94  Lca=0.29  S=27.7  Kn=0.057  LAG=26.6
1832             KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1833             BA   0.316
1834             LG    0.10    0.15    8.00    0.13      11
1835             UI       0      40     122     209     275     413     444     320     237     164
```

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1836          UI      81      57      37      12      12      12       0       0       0       0
1837          UI       0       0       0       0       0       0       0       0       0       0
1838          UI       0       0       0       0       0       0       0       0       0       0
1839          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1840          KK     03   BASIN
1841          KM    BASIN 03
1842          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1843          KM    L=0.35  Lca=0.03  S=34.3  Kn=0.030  LAG=3.9
1844          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1845          BA   0.159
1846          LG    0.10    0.15    8.40    0.10      80
1847          UI       0     892     325       0       0       0       0       0       0       0
1848          UI       0       0       0       0       0       0       0       0       0       0
1849          UI       0       0       0       0       0       0       0       0       0       0
1850          UI       0       0       0       0       0       0       0       0       0       0
1851          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1852          KK     CP1
1853          KM    COMBINE HYDROGRAPHS 2BT1, 01, AND 03
1854          HC       3
              *
              *

1855          KK   RET01  DIVERT
1856          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1857          DT   01RET     46.9      0.0
1858          DI       0   10000
1859          DQ       0   10000
              *
              *

1860          KK     1T6   ROUTE
1861          KM   ROUTE FLOW FROM BASIN 1 TO BASIN 6
1862          RS       1    FLOW      -1
1863          RC   0.013   0.013   0.013    1560    .0030
1864          RX       0      15      17      36     112     130     132     146
1865          RY       4       0       0       3       3       0       0       4
              *
              *
```

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

1866          KK     02A   BASIN
1867          KM    BASIN 02A
1868          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1869          KM    L=0.45  Lca=0.15  S=31.1  Kn=0.041  LAG=11.0
1870          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1871          BA   0.182
1872          LG    0.21    0.19    5.60    0.19      46
1873          UI       0     139     422     528     226      68      17       0       0       0
1874          UI       0       0       0       0       0       0       0       0       0       0
1875          UI       0       0       0       0       0       0       0       0       0       0
1876          UI       0       0       0       0       0       0       0       0       0       0
1877          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1878          KK  RET02A  DIVERT
1879          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1880          DT  02ARET    15.9      0.0
1881          DI       0   10000
1882          DQ       0   10000
              *
              *

1883          KK     02C   BASIN
1884          KM    BASIN 02C
1885          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1886          KM    L=0.53  Lca=0.26  S=28.2  Kn=0.040  LAG=14.4
1887          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1888          BA   0.189
1889          LG    0.15    0.25    5.60    0.28      56
1890          UI       0      82     249     460     360     196      68      27      14       0
1891          UI       0       0       0       0       0       0       0       0       0       0
1892          UI       0       0       0       0       0       0       0       0       0       0
1893          UI       0       0       0       0       0       0       0       0       0       0
1894          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1895          KK  RET02C  DIVERT
1896          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1897          DT  02CRET    28.9      0.0
1898          DI       0   10000
1899          DQ       0   10000
              *
              *

1900          KK     CP2
1901          KM    COMBINE HYDROGRAPHS RET02A AND RET02C
1902          HC       2
              *
```

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

1903      KK    2AT6   ROUTE
1904      KM  ROUTE FLOW FROM BASIN 2A TO BASIN 6
1905      RS      2    FLOW      -1
1906      RC   0.013   0.013   0.013    3440   .0050
1907      RX       0      15      17      36     112     130     132     146
1908      RY       4       0       0       3       3       0       0       4
          *
          *

1909      KK      06   BASIN
1910      KM     BASIN 06
1911      KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1912      KM     L=0.88  Lca=0.36  S=22.7  Kn=0.034  LAG=17.5
1913      KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1914      BA   0.282
1915      LG    0.22    0.25    4.70    0.39      46
1916      UI       0      78     261     417     610     395     235      97      48      17
1917      UI      17       0       0       0       0       0       0       0       0       0
1918      UI       0       0       0       0       0       0       0       0       0       0
1919      UI       0       0       0       0       0       0       0       0       0       0
1920      UI       0       0       0       0       0       0       0       0       0       0
          *
          *

1921      KK   RET06  DIVERT
1922      KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1923      DT   06RET    26.5     0.0
1924      DI       0   10000
1925      DQ       0   10000
          *
          *

1926      KK     CP6
1927      KM     COMBINE HYDROGRAPHS 1Y6, 2AT6, AND RET06
1928      HC       3
          *
          *

1929      KK     6T5   ROUTE
1930      KM   ROUTE FLOW FROM BASIN 6 TO BASIN 5
1931      RS       1    FLOW      -1
1932      RC   0.013   0.013   0.013    2160   .0040
1933      RX       0      15      17      36     112     130     132     146
1934      RY       4       0       0       3       3       0       0       4
          *
          *

1935      KK      05   BASIN
1936      KM     BASIN 05
1937      KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1938      KM     L=0.70  Lca=0.23  S=22.9  Kn=0.039  LAG=15.5
1939      KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1940      BA   0.145
1941      LG    0.19    0.13   10.10    0.05      36
```

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

1942      UI       0      53     167     302     297     175      72      34      10      10
1943      UI       0       0       0       0       0       0       0       0       0       0
1944      UI       0       0       0       0       0       0       0       0       0       0
1945      UI       0       0       0       0       0       0       0       0       0       0
1946      UI       0       0       0       0       0       0       0       0       0       0
          *
          *

1947      KK   RET05  DIVERT
1948      KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1949      DT   05RET    13.2     0.0
1950      DI       0   10000
1951      DQ       0   10000
          *
          *

1952      KK      07   BASIN
1953      KM     BASIN 07
1954      KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1955      KM     L=0.77  Lca=0.39  S=23.4  Kn=0.045  LAG=22.5
1956      KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1957      BA   0.243
1958      LG    0.15    0.15    7.30    0.15      20
1959      UI       0      36     142     215     320     418     291     204     118      62
1960      UI      37      13      11      11       0       0       0       0       0       0
1961      UI       0       0       0       0       0       0       0       0       0       0
1962      UI       0       0       0       0       0       0       0       0       0       0
1963      UI       0       0       0       0       0       0       0       0       0       0
          *
          *

1964      KK   RET07  DIVERT
1965      KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1966      DT   07RET    20.1     0.0
1967      DI       0   10000
```

```
1968          DQ       0   10000
              *
              *

1969          KK     CP5
1970          KM    COMBINE HYDROGRAPHS 6T5, RET05, AND RET07
1971          HC       3
              *
              *

1972          KK    5T12
1973          KM  ROUTE FLOW FROM BASIN 5 TO BASIN 12
1974          RS       1    FLOW      -1
1975          RC   0.013   0.013   0.013    1630    .0040
1976          RX       0      15      17      36      112     130     132     146
1977          RY       4       0       0       3        3       0       0       4
              *
              *
```

1 HEC-1 INPUT PAGE 54

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

1978          KK      12   BASIN
1979          KM    BASIN 12
1980          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1981          KM    L=0.76  Lca=0.16  S=19.7  Kn=0.032  LAG=11.7
1982          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1983          BA   0.269
1984          LG    0.22    0.15    7.60    0.12      36
1985          UI       0     182     535     792     394     121      36       0       0       0
1986          UI       0       0       0       0       0       0       0       0       0       0
1987          UI       0       0       0       0       0       0       0       0       0       0
1988          UI       0       0       0       0       0       0       0       0       0       0
1989          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1990          KK   RET12  DIVERT
1991          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1992          DT   12RET     24.6      0.0
1993          DI       0   10000
1994          DQ       0   10000
              *
              *

1995          KK    CP12
1996          KM    COMBINE HYDROGRAPHS 5T12 AND RET12
1997          HC       2
              *
              *

1998          KK   12T13
1999          KM  ROUTE FLOW FROM BASIN 12 TO BASIN 13
2000          RS       4    FLOW      -1
2001          RC   0.032   0.016   0.032    4520    .0020
2002          RX       0       5      10      15      125     130     135     140
2003          RY       2     1.5       1       0        0       1     1.5       2
              *
              *

2004          KK      08   BASIN
2005          KM    BASIN 08
2006          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2007          KM    L=1.37  Lca=0.94  S=21.2  Kn=0.042  LAG=17.3
2008          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2009          BA   0.769
2010          LG    0.22    0.21    5.40    0.20      32
2011          UI       0      69     115     274     362     437     541     769     817     625
2012          UI     515     412     329     219     122     112      69      54      21      21
2013          UI      21      21      21       0       0       0       0       0       0       0
2014          UI       0       0       0       0       0       0       0       0       0       0
2015          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
```

1 HEC-1 INPUT PAGE 55

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

2016          KK   RET08  DIVERT
2017          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2018          DT   08RET     64.7      0.0
2019          DI       0   10000
2020          DQ       0   10000
              *
              *

2021          KK     8T9
2022          KM  ROUTE FLOW FROM BASIN 8 TO BASIN 9
2023          RS       1    FLOW      -1
2024          RC   0.013   0.013   0.013    1550    .0050
2025          RX       0      15      17      36      112     130     132     146
2026          RY       4       0       0       3        3       0       0       4
              *
              *

2027          KK      09   BASIN
2028          KM    BASIN 09
```

```
2029          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2030          KM    L=0.59  Lca=0.14  S=27.1  Kn=0.042  LAG=12.5
2031          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2032          BA   0.155
2033          LG    0.24    0.25    5.70    0.26      40
2034          UI       0      91     267     444     255      93      30      13       0       0
2035          UI       0       0       0       0       0       0       0       0       0       0
2036          UI       0       0       0       0       0       0       0       0       0       0
2037          UI       0       0       0       0       0       0       0       0       0       0
2038          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2039          KK   RET09  DIVERT
2040          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2041          DT   09RET    13.5     0.0
2042          DI       0   10000
2043          DQ       0   10000
              *
              *

2044          KK    CP9
2045          KM    COMBINE HYDROGRAPHS BT9 AND RET09
2046          HC       2
              *
              *

2047          KK    9T13
2048          KM   ROUTE FLOW FROM BASIN 9 TO BASIN 13
2049          RS       1    FLOW      -1
2050          RC   0.013   0.013   0.013    4240   .0050
2051          RX       0      15      17      36     112     130     132     146
2052          RY       4       0       0       3       3       0       0       4
              *
              *
```



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

2053          KK      13   BASIN
2054          KM    BASIN 13
2055          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2056          KM    L=0.91  Lca=0.30  S=22.0  Kn=0.039  LAG=19.1
2057          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2058          BA   0.307
2059          LG    0.18    0.25    5.00    0.37      45
2060          UI       0      69     243     371     613     465     306     154      78      37
2061          UI      17      17       0       0       0       0       0       0       0       0
2062          UI       0       0       0       0       0       0       0       0       0       0
2063          UI       0       0       0       0       0       0       0       0       0       0
2064          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2065          KK   RET13  DIVERT
2066          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2067          DT   13RET    27.6     0.0
2068          DI       0   10000
2069          DQ       0   10000
              *
              *

2070          KK    CP13
2071          KM    COMBINE HYDROGRAPHS 12T13, 9T13, AND RET13
2072          HC       3
              *
              *

2073          KK   13T75
2074          KM   ROUTE FLOW FROM BASIN 13 TO BASIN CP75
2075          RS       1    FLOW      -1
2076          RC   0.032   0.016   0.032     600   .0020
2077          RX       0       5      10      15     125     130     135     140
2078          RY       2     1.5       1       0       0       1     1.5       2
              *
              *

2079          KK      14   BASIN
2080          KM    BASIN 14
2081          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2082          KM    L=1.12  Lca=0.63  S=25.9  Kn=0.042  LAG=28.5
2083          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2084          BA   0.192
2085          LG    0.22    0.25    4.40    0.48      42
2086          UI       0      23      62     113     146     201     275     205     157     118
2087          UI      74      39      29      19       7       7       7       7       0       0
2088          UI       0       0       0       0       0       0       0       0       0       0
2089          UI       0       0       0       0       0       0       0       0       0       0
2090          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
```



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

2091          KK   RET14  DIVERT
2092          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
```

```
2093          DT   14RET    15.8      0.0
2094          DI        0   10000
2095          DQ        0   10000
              *
              *

2096          KK    CP75 COMBINE
2097          KM  COMBINE HYDROGRAPHS 11I7B, 13I75, AND RET14
              * KO      2
2098          HC        3
              *
              * ************************************************************************
              *

2099          KK   75IPC
2100          KM  ROUTE 75 THROUGH POWERLINE FLOODWAY TO AIR FORCE CHANNEL
2101          RS        1    FLOW       -1
2102          RC      .03     .013      .03     3900     .0041
2103          RX        0     1005      1023   1030.5   1036.5     1044     1062     2067
2104          RY        6        5         5        0        0        5        5        6
              *
              *

2105          KK     77A
2106          KM  BASIN 77A
2107          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2108          KM  L=       2.9  Lca=       1.5   S=    31.1  Kn= .092  LAG= 119.0
2109          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2110          BA    1.74
2111          LG     .35      .36     5.00      .27      .00
2112          UI     49.      49.      49.      49.      49.      108.     162.     185.     205.     230.
2113          UI    244.     264.     278.     293.     311.     333.     358.     380.     406.     462.
2114          UI    537.     584.     659.     601.     541.     496.     461.     430.     407.     385.
2115          UI    362.     334.     311.     293.     273.     252.     238.     226.     189.     161.
2116          UI    141.     104.      87.      87.      83.      81.      81.      73.      49.      49.
2117          UI     49.      49.      49.      22.      15.      15.      15.      15.      15.      15.
2118          UI     15.      15.      15.      15.      15.      15.      15.      15.      15.      15.
2119          UI     15.       0.       0.       0.       0.       0.       0.       0.       0.       0.
2120          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

2121          KK   77AIB    ROUTE
2122          KM  ROUTE BASIN 77A THROUGH THE KEIGHLEY PLACE SUBDIVISION FROM MERIDIAN ROAD TO
2123          KM  TO MOUNTAIN ROAD.
2124          RS        1    FLOW       -1
2125          RC    0.045    0.040    0.045     3000   0.0050     0.00
2126          RX     0.00     5.00    10.00    37.00    47.00    74.00    79.00    84.00
2127          RY     5.50     5.00     4.50     0.00     0.00     4.50     5.00     5.50
              *
              *
```



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

2128          KK     77B   BASIN
2129          KM  BASIN 77B
2130          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2131          KM  L=0.56  Lca=0.26  S=28.6  Kn=0.047  LAG=17.2
2132          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2133          BA   0.349
2134          LG    0.19     0.25     5.40     0.30       18
2135          UI     100      337      536      757      486      273      113       54       20       21
2136          UI       0        0        0        0        0        0        0        0        0        0
              *
              *

2137          KK  RET77B  DIVERT
2138          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
2139          DT  77BRET    16.5      0.0
2140          DI        0   10000
2141          DQ        0   10000
              *
              *

2142          KK   CP77B COMBINE
2143          KM  COMBINE HYDROGRAPHS 77AIB AND 77B.
2144          HC        2
              *
              *

2145          KK   77BIC    ROUTE
2146          KM  ROUTE FLOW THROUGH THE MOUNTAIN HORIZONS (SOUTH) DEVELOPEMENT FROM MOUNTAIN
2147          KM  ROAD TO SIGNAL BUTTE ROAD.
2148          RS        3    FLOW       -1
2149          RC    0.045    0.040    0.045     4750   0.0042     0.00
2150          RX     0.00     5.00    10.00    20.00    85.00   105.00   110.00   115.00
2151          RY     5.00     4.00     3.00     0.00     0.00     3.00     4.00     5.00
              *
              *

2152          KK     77C   BASIN
2153          KM  BASIN 77C
2154          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2155          KM  L=0.76  Lca=0.51  S=23.7  Kn=0.040  LAG=22.0
2156          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2157          BA   0.279
2158          LG    0.25     0.25     6.00     0.21       30
```

```
2159          UI      42     172     257     388     485     324     228     119      66      38
2160          UI      14      13      13       0       0       0       0       0       0       0
              *
              *

2161          KK  RET77C  DIVERT
2162          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
2163          DT  77CRET    16.8     0.0
2164          DI       0   10000
2165          DQ       0   10000
              *
              *
```



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

2166          KK    C77C COMBINE
2167          KM  COMBINE HYDROGRAPHS 77BTC AND 77C
2168          HC       2
              *
              *

2169          KK  77C778   ROUTE
2170          KM  ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN ENGINEERED
2171          KM  CHANNEL FROM RAY ROAD TO WILLIAMS FIELD ROAD.
2172          RS       1    FLOW      -1
2173          RC   0.032   0.032   0.032    4435  0.0020    0.00
2174          RX    0.00    5.00   10.00   24.00  124.00  138.00  143.00  148.00
2175          RY    4.50    4.00    3.50    0.00    0.00    3.50    4.00    4.50
              *
              *

2176          KK     78A
2177          KM  BASIN 78A
2178          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2179          KM  L=      3.3  Lca=      1.3   S=   30.2  Kn= .090  LAG= 118.0
2180          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2181          BA    1.88
2182          LG     .35     .36    5.00     .27     .00
2183          UI     54.     54.     54.     54.     54.    124.    176.    203.    227.    252.
2184          UI    268.    290.    305.    322.    342.    366.    396.    417.    451.    515.
2185          UI    612.    641.    716.    643.    579.    531.    494.    464.    437.    417.
2186          UI    385.    356.    334.    315.    290.    270.    255.    233.    206.    159.
2187          UI    153.     95.     95.     95.     88.     88.     88.     65.     54.     54.
2188          UI     54.     54.     45.     16.     16.     16.     16.     16.     16.     16.
2189          UI     16.     16.     16.     16.     16.     16.     16.     16.     16.     16.
2190          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2191          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2192          KK   78ATB   ROUTE
2193          KM  ROUTE FLOW FROM 78A TO 78B VIA WASH CROSSING COUNTY LINE
2194          RS       7    FLOW      -1
2195          RC   0.045   0.040   0.045    3500  0.0042    0.00
2196          RX    0.00  500.00  980.00 1003.00 1007.00 1031.00 1511.00 2011.00
2197          RY    4.50    3.50    3.00    0.00    0.00    3.00    3.50    4.50
              *
              *

2198          KK     78B   BASIN
2199          KM  BASIN 78B
2200          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2201          KM  L=0.60  Lca=0.40  S=31.7  Kn=0.050  LAG=21.7
2202          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2203          BA   0.396
2204          LG    0.30    0.17    6.80    0.15      15
2205          UI      61     254     371     576     682     457     315     156      90      48
2206          UI      20      19       0       0       0       0       0       0       0       0
              *
              * CURRENTLY THERE IS NO EXISTING RETENTION OR PLANNED RETENTION FOR BASIN 78B
              * DUE TO THE CURRENT LAND USE OF LARGE LOT RESIDENTIAL.
              *
```



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

2207          KK    C78B COMBINE
2208          KM  COMBINE HYDROGRAPHS 78ATB AND 78B
2209          HC       2
              *
              *

2210          KK   78BTC   ROUTE
2211          KM  ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
2212          KM  WESTERN EDGE OF 78C.
2213          RS       3    FLOW      -1
2214          RC   0.035   0.022   0.035    4500  0.0033    0.00
2215          RX    0.00  100.00  110.00  115.00  120.00  125.00  130.00  135.00
2216          RY    5.00    4.00    3.50    0.00    0.00    3.50    8.00    9.00
              *
              *

2217          KK     78C   BASIN
2218          KM  BASIN 78C
2219          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2220          KM  L=0.50  Lca=0.30  S=31.8  Kn=0.048  LAG=17.4
```

```
2221          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2222          BA   0.288
2223          LG    0.18    0.15    7.60    0.14       6
2224          UI      80     273     428     624     405     236      96      48      17      16
2225          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2226          KK  RET78C  DIVERT
2227          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
2228          DT  78CRET     2.2     0.0
2229          DI       0   10000
2230          DQ       0   10000
              *
              *

2231          KK    C78C COMBINE
2232          KM  COMBINE HYDROGRAPHS 78BIC AND 78C.
2233          HC       2
              *
              *

2234          KK   C78C2 COMBINE
2235          KM  COMBINE HYDROGRAPHS 77CI78 AND C78C.
              * KO      2
2236          HC       2
              *
              *
```

1 HEC-1 INPUT PAGE 61

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

2237          KK  78CI79   ROUTE
2238          KM  ROUTE 78C TO 79A FROM SIGNAL BUTTE ROAD TO THE PROPERTY BOUNDARY APPROXIMATEL
2239          KM  1/4 MILE TO THE WEST OF SIGNAL BUTTE ROAD VIA ENGINEERED CHANNEL.
2240          RS       2    FLOW      -1
2241          RC   0.032   0.032   0.032    4215  0.0033    0.00
2242          RX    0.00    5.00   10.00   26.00   81.00   97.00  102.00  107.00
2243          RY    5.00    4.50    4.00    0.00    0.00    4.00    4.50    5.00
              *
              *  ***********************************UPDATED EM  PLANNING **********************
              *  ***********************************DES 01/18/2013**************************
              *
              *

2244          KK      20   BASIN
2245          KM    BASIN 20
2246          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2247          KM    L=1.02  Lca=0.45  S=17.6  Kn=0.041  LAG=25.5
2248          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2249          BA   0.306
2250          LG    0.21    0.15    8.00    0.11      31
2251          UI       0      40     132     217     290     456     408     299     217     131
2252          UI      69      46      24      12      12      12       0       0       0       0
2253          UI       0       0       0       0       0       0       0       0       0       0
2254          UI       0       0       0       0       0       0       0       0       0       0
2255          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2256          KK   RET20  DIVERT
2257          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2258          DT   20RET     24.3     0.0
2259          DI       0   10000
2260          DQ       0   10000
              *
              *

2261          KK   CP22B COMBINE
2262          KM  COMBINE HYDROGRAPHS 78CI79 AND RET20
              * KO      2
2263          HC       2
              *
              *  ***********************************UPDATED EM  PLANNING **********************
              *  ***********************************DES 01/18/2013**************************
              *

2264          KK      16   BASIN
2265          KM    BASIN 16
2266          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2267          KM    L=0.44  Lca=0.21  S=34.1  Kn=0.044  LAG=13.1
2268          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2269          BA   0.106
2270          LG    0.22    0.17    6.80    0.17      33
2271          UI       0      56     167     292     184      77      29       8       0       0
2272          UI       0       0       0       0       0       0       0       0       0       0
```

1 HEC-1 INPUT PAGE 62

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

2273          UI       0       0       0       0       0       0       0       0       0       0
2274          UI       0       0       0       0       0       0       0       0       0       0
2275          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2276          KK   RET16  DIVERT
2277          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
```

```
2278          DT   16RET      8.4      0.0
2279          DI        0    10000
2280          DQ        0    10000
              *
              *

2281          KK       18    BASIN
2282          KM     BASIN 18
2283          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2284          KM     L=0.72  Lca=0.33  S=20.8  Kn=0.041  LAG=19.2
2285          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2286          BA    0.320
2287          LG     0.21     0.25     5.80     0.25       31
2288          UI        0       71      251      383      634      486      321      165       83       40
2289          UI       17       17        0        0        0        0        0        0        0        0
2290          UI        0        0        0        0        0        0        0        0        0        0
2291          UI        0        0        0        0        0        0        0        0        0        0
2292          UI        0        0        0        0        0        0        0        0        0        0
              *
              *

2293          KK   RET18  DIVERT
2294          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2295          DT   18RET     25.4      0.0
2296          DI        0    10000
2297          DQ        0    10000
              *
              *

2298          KK   18T19    ROUTE
2299          KM   ROUTE FLOW FROM BASIN 18 TO BASIN 19
2300          RS        4     FLOW       -1
2301          RC    0.013    0.013    0.013     1150    .0020
2302          RX        0       15       17       36      112      130      132      146
2303          RY        4        0        0        3        3        0        0        4
              *
              *

2304          KK   CP19A COMBINE
2305          KM   COMBINE HYDROGRAPHS RET16 AND 18T19
              * KO      2
2306          HC        2
              *
              *
```

1 HEC-1 INPUT PAGE 63

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

2307          KK       19    BASIN
2308          KM     BASIN 19
2309          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2310          KM     L=0.50  Lca=0.20  S=20.0  Kn=0.041  LAG=13.9
2311          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2312          BA    0.102
2313          LG     0.21     0.15     8.40     0.09       30
2314          UI        0       47      144      262      188       93       34       11        8        0
2315          UI        0        0        0        0        0        0        0        0        0        0
2316          UI        0        0        0        0        0        0        0        0        0        0
2317          UI        0        0        0        0        0        0        0        0        0        0
2318          UI        0        0        0        0        0        0        0        0        0        0
              *
              *

2319          KK   RET19  DIVERT
2320          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO      2
2321          DT   19RET      8.1      0.0
2322          DI        0    10000
2323          DQ        0    10000
              *
              *

2324          KK   CP19B COMBINE
2325          KM   COMBINE HYDROGRAPHS CP19A AND RET20.
2326          HC        2
              *
              *

2327          KK       17    BASIN
2328          KM     BASIN 17
2329          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2330          KM     L=0.92  Lca=0.47  S=19.6  Kn=0.045  LAG=26.8
2331          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2332          BA    0.134
2333          LG     0.25     0.25     4.10     0.55       30
2334          UI        0       17       51       88      115      171      190      137      101       71
2335          UI       35       25       17        5        5        5        5        0        0        0
2336          UI        0        0        0        0        0        0        0        0        0        0
2337          UI        0        0        0        0        0        0        0        0        0        0
2338          UI        0        0        0        0        0        0        0        0        0        0
              *
              *

2339          KK   RET17  DIVERT
2340          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO      2
2341          DT   17RET     10.1      0.0
2342          DI        0    10000
```

```
2343            DQ      0   10000
                *
                *  **************************************************************************
                *
1                                               HEC-1 INPUT                                            PAGE 64

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


2344            KK     79A   BASIN
2345            KM  BASIN 79A
2346            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2347            KM  L=1.43  Lca=0.82  S=14.7  Kn=0.090  LAG=82.6
2348            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2349            BA    1.067
2350            LG    0.10     0.15     7.60     0.14       0
2351            UI       0       43       44       43      63     146     167     203     224     240
2352            UI     262      288      316      346     408     489     565     524     446     400
2353            UI     372      340      305      278     255     223     209     178     140     110
2354            UI      76       76       72       71      47      44      44      42      13      13
2355            UI      14       13       13       14      13      13      14      13      13      14
                *
                *

2356            KK  CP79A1 COMBINE
2357            KM  COMBINE HYDROGRAPHS RET17, 79A, CP22B, AND CP19B.
                * KO       2
2358            HC         4
                *
                *

2359            KK     78F
2360            KM  BASIN 78F
2361            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2362            KM  L=      3.7  Lca=       2.1   S=   29.8  Kn= .090  LAG= 147.0
2363            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2364            BA    4.19
2365            LG     .35      .36     5.00      .27     .00
2366            UI     96.      96.      96.      96.     96.     96.    148.    315.    325.    368.
2367            UI    399.     442.     468.     495.    521.    541.    566.    595.    626.    663.
2368            UI    706.     737.     774.     845.    936.   1085.   1119.   1276.   1239.   1127.
2369            UI   1033.     968.     907.     862.    820.    782.    751.    712.    667.    629.
2370            UI    597.     570.     541.     502.    472.    454.    436.    368.    339.    276.
2371            UI    276.     174.     170.     170.    168.    158.    158.    158.    156.     96.
2372            UI     96.      96.      96.      96.     96.     79.     29.     29.     29.     29.
2373            UI     29.      29.      29.      29.     29.     29.     29.     29.     29.     29.
2374            UI     29.      29.      29.      29.     29.     29.     29.      0.      0.      0.
2375            UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                *
                *

2376            KK    82A1
2377            KM  BASIN 82A1
2378            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2379            KM  L=      3.6  Lca=        .9   S=   33.9  Kn= .090  LAG= 103.0
2380            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2381            BA    3.12
2382            LG     .35      .36     5.00      .27     .00
2383            UI    102.     102.     102.     102.    163.    335.    381.    436.    485.    526.
2384            UI    564.     599.     644.     693.    757.    801.    901.   1048.   1222.   1356.
2385            UI   1223.    1084.     987.     913.    852.    800.    742.    675.    629.    589.
2386            UI    529.     494.     459.     391.    304.    266.    180.    180.    173.    167.
2387            UI    167.     123.     102.     102.    102.    102.     36.     31.     31.     31.
1                                               HEC-1 INPUT                                            PAGE 65

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

2388            UI     31.      31.      31.      31.     31.     31.     31.     31.     31.     31.
2389            UI     31.       0.       0.       0.      0.      0.      0.      0.      0.      0.
2390            UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
                *
                *

2391            KK   C82A1
2392            KM  COMBINE FLOWS FROM SUBBASINS 78F AND 82A1 NORTH OF PECOS ROAD AT
2393            KM  NEW DETENTION BASIN
2394            HC       2
                *
                *

2395            KK  DB82A1
2396            KM  PECOS NORTH BASIN
2397            KM  NEW DETENTION BASIN LOCATED EAST OF MERIDIAN ROAD & 660' NORTH OF PECOS RD.
2398            KM  WITH 1-42" RCP OUTLET & 86' SPILLWAY AT ELEV=44
                * KO       2        2
2399            RS       1     STOR        0
2400            SV       0        8       34       73     113     153     195     237     280     346
2401            SE      36       37       38       39      40      41      42      43      44    46.1
2402            SL    33.5      9.6      .62       .5
2403            SS      44      195        3      1.5
                *
                *

2404            KK     PS-9
2405            KM  REACH PS-9
2406            KM  OUTFLOW CHANNEL FROM NEW DETENTION BASIN 82A TO MAIN CHANNEL @ PECOS
2407            RS       1     FLOW       -1
2408            RC    .025     .025     .025      500   .0005
2409            RX       0        8       16       42      46      72      80      88
```

```
2410          RY     4.1     4.2     4.3       0       0     4.3     4.2     4.1
              *
              *

2411          KK    CAP2
2412          KM  INFLOW FROM EAST OF THE CAP THROUGH 1 - 36" PIPE OVERCHUTE
2413          KM  STATION #536+00 SALT-GILA AQUEDUCT REACH 2
2414          KM  QI CARDS BASED ON OVERCHUTE CAPACITY OF 64 CFS
2415          IN      60
2416          BA     .01
2417          QI       0      20      64      64      64      64      64      64      64      64
2418          QI      64      64      64      64      64      64      64      64      64      64
2419          QI      64      64      64      64      64
              *
              *

2420          KK   RCAP2
2421          KM  ROUTE CAP2 THROUGH 82A2 VIA WASH TO SUBBASIN 82A2
2422          IN      15
2423          RS      11    FLOW      -1
2424          RC    .045     .04    .045   24000     .05
2425          RX       0     500    1000    1010    1020    1030    1530    2030
2426          RY       8       5       3       0       0       3       5       8
              *
              *
1                                      HEC-1 INPUT                                    PAGE 66

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

2427          KK    82A2
2428          KM  BASIN 82A2
2429          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2430          KM  L=      4.6  Lca=      2.9   S=   27.2  Kn= .089  LAG= 183.0
2431          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2432          BA    4.13
2433          LG     .35     .36    5.00     .27    1.00
2434          UI     76.     76.     76.     76.     76.     76.     76.     76.    177.    249.
2435          UI    250.    291.    291.    339.    349.    371.    381.    406.    420.    430.
2436          UI    448.    466.    483.    503.    529.    561.    578.    596.    631.    680.
2437          UI    743.    805.    911.    923.   1027.    979.    901.    845.    794.    751.
2438          UI    717.    686.    659.    635.    613.    594.    570.    540.    514.    487.
2439          UI    470.    455.    437.    407.    393.    372.    362.    349.    315.    291.
2440          UI    263.    218.    218.    179.    134.    134.    134.    134.    128.    125.
2441          UI    125.    125.    125.     96.     76.     76.     76.     76.     76.     76.
2442          UI     76.     67.     23.     23.     23.     23.     23.     23.     23.     23.
2443          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
2444          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.      0.
2445          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2446          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2447          KK  CP82A2
2448          KM  COMBINE FLOW FROM ROUTED CAP2 AND SUBBASIN 82A2
2449          HC       2
              *
              *

2450          KK    82A4
2451          KM  BASIN 82A4
2452          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2453          KM  L=      3.5  Lca=      1.5   S=   29.1  Kn= .090  LAG= 128.0
2454          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2455          BA    2.13
2456          LG     .35     .36    5.00     .27     .00
2457          UI     56.     56.     56.     56.     56.     70.    184.    193.    214.    248.
2458          UI    265.    281.    302.    316.    332.    352.    374.    401.    424.    447.
2459          UI    494.    557.    650.    691.    742.    667.    606.    560.    523.    490.
2460          UI    466.    443.    419.    389.    364.    343.    325.    299.    281.    267.
2461          UI    251.    214.    182.    161.    126.     99.     99.     97.     92.     92.
2462          UI     92.     69.     56.     56.     56.     56.     56.     27.     17.     17.
2463          UI     17.     17.     17.     17.     17.     17.     17.     17.     17.     17.
2464          UI     17.     17.     17.     17.     17.     17.      0.      0.      0.      0.
2465          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2466          KK  82A4T3
2467          KM  REACH MN-2
2468          KM  ROUTE FLOW FROM SUBBASIN 82A4 TO DETENTION BASIN 82A3
2469          RS       2    FLOW      -1
2470          RC    .025    .025    .025    1050   .0005
2471          RX       0       8      16      47     107     138     146     154
1                                      HEC-1 INPUT                                    PAGE 67

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

2472          RY     5.0     5.1     5.2       0       0     5.2     5.1     5.0
              *
              *

2473          KK    82A3
2474          KM  BASIN 82A3
2475          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2476          KM  L=      3.6  Lca=      2.0   S=   28.3  Kn= .090  LAG= 145.0
2477          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2478          BA    2.02
2479          LG     .35     .36    5.00     .27     .00
```

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2480          UI     47.     47.     47.     47.     47.     47.     82.    154.    162.    180.
2481          UI    200.    218.    230.    246.    257.    268.    280.    294.    310.    330.
2482          UI    351.    365.    387.    425.    477.    553.    566.    633.    583.    529.
2483          UI    492.    460.    434.    410.    392.    376.    361.    336.    316.    299.
2484          UI    284.    271.    250.    237.    228.    216.    190.    180.    136.    135.
2485          UI    101.     83.     83.     83.     78.     77.     77.     77.     52.     47.
2486          UI     47.     47.     47.     47.     42.     14.     14.     14.     14.     14.
2487          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
2488          UI     14.     14.     14.     14.     14.     14.      0.      0.      0.      0.
2489          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2490          KK  CP82A3
2491          KM  COMBINE FLOW FROM SUBBASIN 82A4 AND SUBBASIN 82A3 BEFORE DETENTION BASIN
2492          HC       2
              *
              *

2493          KK  CP82A5
2494          KM  COMBINE FLOWS FROM CAP OVERCHUTE AND SUBBASIN 82A
2495          HC       2
              *
              *

2496          KK   DB82B
2497          KM  PECOS SOUTH BASIN
2498          KM  NEW DETENTION BASIN LOCATED EAST OF MERIDIAN ROAD & 660' SOUTH OF PECOS RD.
2499          KM  WITH 1-66" RCP OUTLET & 80' SPILLWAY AT ELEV 41
              * KO     2       2
2500          RS       1    STOR       0
2501          SV       0     3.5     9.6    25.7    62.7   110.5   158.7   207.5   257.3     320
2502          SE    31.5      33      34      35      36      37      38      39      40    42.1
2503          SL      33    23.7     .62      .5
2504          SS      41      80       3     1.5
              *
              *

2505          KK    MN-1
2506          KM  REACH MN-1  plus culvert PSC-7
2507          KM  ROUTE FLOW FROM NEW DETENTION BASIN 82B TO MAIN LINE CHANNEL @ PECOS
2508          RS       2    FLOW      -1
2509          RC    .025    .025    .025    1030   .0005
2510          RX       0       8      16      47      55      87      95     103
1                                        HEC-1 INPUT                                        PAGE 68

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

2511          RY     5.1     5.2     5.3       0       0     5.3     5.2     5.1
              *
              *

2512          KK  CP82A6
2513          KM  COMBINE FLOWS AFTER DETENTION BASINS.
2514          HC       2
              *
              *

2515          KK  82TBOX
2516          KM  REACH PS-8
2517          KM  ROUTE FLOW FROM DETENTION BASIN DB82B TO 1000' FOOT LONG BOX CULVERT (PSC-6).
2518          RS       1    FLOW      -1
2519          RC    .025    .025    .025     750   .0005
2520          RX       0       8      16    47.2      67      98     106     114
2521          RY     5.0     5.1     5.2       0       0     5.2     5.1     5.0
              *
              *

2522          KK  BOXCLV
2523          KM  REACH PSC-6
2524          KM  ROUTE FLOW THROUGH BOX CULVERT
2525          RS       1    FLOW      -1
2526          RC    .015    .012    .015    1000   .0020
2527          RX       0       8      16   16.01   28.01   28.02      36      44
2528          RY     4.8     4.9       5       0       0       5     4.9     4.8
              *
              *

2529          KK  BOXT78
2530          KM  REACH PS-5, PS-6, PS-7 plus culverts PSC-5 & PSC-4
2531          KM  ROUTE FLOW FROM 1000' BOX CULVERT TO C78D  (SIGNAL BUTTE ROAD)
2532          RS       3    FLOW      -1
2533          RC    .025    .025    .025    3400   .0005
2534          RX       0       8      16      47      67      98     106     114
2535          RY     5.4     5.3     5.2       0       0     5.2     5.3     5.4
              *
              *

2536          KK     78D
2537          KM  BASIN 78D
2538          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2539          KM  L=      1.2  Lca=       .5   S=    21.7  Kn= .030  LAG=   19.5
2540          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2541          BA     .89
2542          LG     .15     .15    8.00     .11   55.00
2543          UI   189.    678.   1029.   1713.   1367.    909.    496.    240.    123.     47.
2544          UI    47.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2545          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
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```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2546      KK   R78D
2547      KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2548      DT    D78D      84
2549      DI       0   10000
2550      DQ       0   10000
          *
          *

2551      KK    82B
2552      KM  BASIN 82B
2553      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2554      KM  L=        .9  Lca=       .4   S=   21.2  Kn= .030  LAG=  17.2
2555      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2556      BA     .92
2557      LG     .15     .25    5.00     .36   55.00
2558      UI   266.    879.   1420.   2004.   1268.    727.    294.    142.     55.     55.
2559      UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2560      UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
          *
          *

2561      KK    R82
2562      KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2563      DT    D82       1
2564      DI       0   10000
2565      DQ       0   10000
          *
          *

2566      KK   DITRW
2567      KM  DIVERTING 110.7 ACRE-FEET DUE TO ON-SITE RETENTION
2568      KM  VOLUMES WERE DERIVED FROM DRAINAGE REPORT - REFERENCE 7.
2569      DI     TRW   110.7
2570      DI       0   10000
2571      DQ       0   10000
          *
          *

2572      KK    C78D
2573      KM  COMBINE FLOWS FROM 78D, 82B AND ROUTED FLOW 82T78D
2574      KM  @ PECOS ROAD AND SIGNAL BUTTE ROAD.
2575      HC       3
          *
          *

2576      KK   78DTE
2577      KM  REACH PS-2, PS-3, PS-4 plus culverts PSC-3 AND PSC-2.
2578      KM  ROUTE FLOWS FROM 78D (PECOS RD AND SIGNAL BUTTE RD) TO 78E (PECOS AND CRISMON
2579      RS      11    FLOW      -1
2580      RC    .025   0.025   0.025    5100   .0005
2581      RX       0       8      16    53.2    93.2   130.4   138.4   146.4
2582      RY     6.0     6.1     6.2       0       0     6.3     6.1     6.0
          *
          *
```



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

2583      KK     78E
2584      KM  BASIN 78E
2585      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2586      KM  L=       1.1  Lca=        .5   S=   17.4  Kn= .087  LAG=  57.4
2587      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2588      BA    1.01
2589      LG     .35     .26    8.80     .06    1.00
2590      UI    59.     59.    108.    212.    271.    313.    351.    402.    460.    565.
2591      UI   741.    698.    577.    502.    447.    382.    335.    289.    241.    166.
2592      UI   104.    100.     97.     60.     59.     45.     18.     18.     18.     18.
2593      UI    18.     18.     18.     18.      0.      0.      0.      0.      0.      0.
2594      UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
          *
          *

2595      KK     83
2596      KM  BASIN 83
2597      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2598      KM  L=       2.0  Lca=        .5   S=   15.0  Kn= .030  LAG=  25.8
2599      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2600      BA    1.01
2601      LG     .15     .25    5.00     .36   55.00
2602      UI   131.    423.    700.    931.   1454.   1362.    993.    726.    464.    226.
2603      UI   161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
2604      UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
          *
          *

2605      KK    R83
2606      KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2607      DT    D83       83
2608      DI       0   10000
2609      DQ       0   10000
          *
```

```
                *

2610            KK    C78E
2611            KM  COMBINE FLOWS FROM 78D AND 78E (CRISMON ROAD)
2612            HC       3
                *
                *

2613            KK  78ET84
2614            KM  REACH PS-1
2615            KM  ROUTE FLOWS WEST ALONG PECOS IN A PROPOSED CHANNEL
2616            KM  ROUTE FLOWS FROM CRISMON ROAD TO ELLSWORTH ROAD.
2617            RS       4    FLOW      -1
2618            RC    .025   0.025   0.025    4840   .0005
2619            RX       0       8      16    53.2    93.2   130.4   138.4   146.4
2620            RY     6.0     6.1     6.2       0       0     6.2     6.1     6.0
                *
                *
1                                              HEC-1 INPUT                                              PAGE 71

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


2621            KK      84
2622            KM  BASIN 84
2623            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2624            KM  L=       2.0  Lca=        .5   S=   12.5  Kn= .030  LAG=  26.7
2625            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2626            BA     .99
2627            LG     .15     .25    4.70     .40   55.00
2628            UI    125.    380.    651.    855.   1278.   1399.   1008.    747.    520.    258.
2629            UI    182.    120.     38.     38.     38.      0.      0.      0.      0.      0.
2630            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

2631            KK     R84
2632            KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2633            DT     D84      85
2634            DI       0   10000
2635            DQ       0   10000
                *
                *

2636            KK     C84
2637            KM  COMBINE FLOWS FROM 78E AND 84  AT ELLSWORTH AND PECOS ROAD
2638            KM  CHANNEL EAST SIDE OF GATEWAY WILLIAMS FLOWING TO THE NORTH
2639            HC       2
                *
                *

2640            KK  84T79B
2641            KM  REACH EH-3B
2642            KM  ROUTE FLOWS FROM THE CORNER OF PECOS AND ELLSWORTH ROADS TO
2643            KM  THE SOUTH OF WILLIAMS FIELD ROAD AND ELLSWORTH ROAD
2644            KM  (THIS IS THE COMBINE POINT FROM BASIN 79B)
2645            RS       1    FLOW      -1
2646            RC    .015    .015    .015    3383   .0010
2647            RX       0       8      16      30      55      69      77      85
2648            RY     6.7     6.8     6.9       0       0     6.9     6.8     6.7
                *
                *

2649            KK     79B
2650            KM  BASIN 79B
2651            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2652            KM  L=       1.4  Lca=        .6   S=    9.0  Kn= .090  LAG=  77.7
2653            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2654            BA    1.00
2655            LG     .35     .25    9.70     .05     .00
2656            UI     43.     43.     43.     85.    150.    179.    207.    232.    250.    275.
2657            UI    306.    335.    388.    479.    557.    515.    444.    396.    360.    331.
2658            UI    295.    267.    240.    216.    192.    155.    123.     76.     76.     71.
2659            UI     71.     48.     43.     43.     36.     13.     13.     13.     13.     13.
2660            UI     13.     13.     13.     13.     13.     13.      0.      0.      0.      0.
2661            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *
1                                              HEC-1 INPUT                                              PAGE 72

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


2662            KK   C79B1
2663            KM  FLOWS FROM SOUTH CHANNEL ALONG ELLSWORTH ROAD.
2664            HC       2
                *
                *

2665            KK  79BTB2
2666            KM  REACH EH-3A
2667            KM  ROUTE FLOWS FROM THE COMBINE POINT OF SUB-BASIN 79B TO
2668            KM  WILLIAMS FIELD ROAD AND ELLSWORTH ROAD
2669            RS       1    FLOW      -1
2670            RC    .025    .015    .025    5000   .0010
2671            RX       0       8      16      30      55      69      77      85
2672            RY     6.7     6.8     6.9       0       0     6.9     6.8     6.7
                *
                *
```

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2673          KK   C79B2
2674          KM  COMBINE 79A AND ROUTED 79B (WHICH IS HYDROGRAPH C79B1)
2675          HC       2
              *
              *

2676          KK  79IPC2
2677          KM  REACH EH-1, EH-2, plus culvert EHC-1
2678          KM  ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NEW NORTH
2679          KM  PERIMETER CHANNEL ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD
2680          RS       2    FLOW      -1
2681          RC    .025    .015    .025    4760   .0014
2682          RX       0       8      16      33      61      78      86      94
2683          RY     8.4     8.5     8.4       0       0     8.4     8.5     8.4
              *
              *

2684          KK   CPPWR
2685          KM  COMBINE FLOWS FROM 75 AND 79 IN THE POWERLINE FLOODWAY ALONG RAY ROAD
2686          KM  AT ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD
              * KO      2
2687          HC       2
              *
              *
              * KK*DBPWR
              * KM DIVERT FROM POWERLINE CHANNEL INTO THE RAY DETENTION BASIN
              * KM USES A REALISTIC SIDE-WEIR EQUATION TO FORM POWER CURVE
              * KM WEIR CREST = 3.25FT; WEIR LENGTH =  750; 4.0FT DIV STRUCTURE.
              * KO       3
              * DI PWRDB     1537
              * DI       0     528     544     576     628     704     955    5730
              * DQ       0       0      11      40      89     162     410    5174
              *
1                                        HEC-1 INPUT                                        PAGE 73

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

2688          KK  PWRT80
2689          KM  REACH PR-3, PR-4, plus culvert PRC-2
2690          KM  ROUTE FLOWS FROM PLF COMBINE TO CATCH POINT AT 80A VIA PLF IMPROVEMENT
2691          RS       1    FLOW      -1
2692          RC    .025    .015    .025    3680   .0014
2693          RX       0       8      16      34      62      79      87      95
2694          RY     8.5     8.6     8.7       0       0     8.7     8.6     8.5
              *
              *

2695          KK     80A
2696          KM  BASIN 80A
2697          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2698          KM  L=      3.8  Lca=      2.2   S=   14.2  Kn= .030  LAG=  58.2
2699          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2700          BA    2.64
2701          LG     .15     .15    9.70     .06   55.00
2702          UI    153.    153.    265.    544.    690.    802.    899.   1020.   1171.   1421.
2703          UI   1851.   1871.   1534.   1330.   1185.   1024.    896.    770.    653.    479.
2704          UI    305.    265.    251.    187.    153.    153.     50.     47.     47.     47.
2705          UI     47.     47.     47.     47.      0.      0.      0.      0.      0.      0.
2706          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2707          KK    R80A
2708          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2709          DI    D80A      33
2710          DI       0   10000
2711          DQ       0   10000
              *
              * THE SECTION BELOW COMBINES THE ROUTED FLOW FROM SANTAN AND POWER
              * THEN ROUTES THRU THE RAY DB
              * KKDRSNDB
              * KM RETURNS THE DIVERSION FROM THE SANTAN CHANNEL
              * DR SANDB
              *
              * KKDRPWDB
              * KM RETURNS THE DIVERSION FROM THE POWERLINE CHANNEL
              * DR PWRDB
              *
              * KK CPRAY
              * KM COMBINES THE TWO ROUTED FLOWS IN THE RAY DETENTION BASIN
              * HC      2       1
              *
              * KK*RTRAY
              * KM ROUTES THE HYDROGRAPH OUT OF THE RAY BASIN
              * KM Currently incorporates a dummy set of outflow data
              * KO      1
              * RS      1    STOR      -1
              * SV      0     244     493     747    1005    1269    1537
              * SE      0    1.54    3.08    4.63    6.17    7.71    9.25
              * SQ      0       1       2       3       4       5       6
              *
              *
1                                        HEC-1 INPUT                                        PAGE 74

LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
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2712          KK   CPS0A
2713          KM  COMBINE FLOW IN THE POWERLINE FLOODWAY WITH FLOW COMING FROM SUBBASIN S0A
2714          KM  THE LOCATION FOR THIS COMBINATION AT THE NW CORNER OF SUBBASIN S0A
              * KO      2
2715          HC        2
              * HC      3
              *
              *

2716          KK  PWRSAN
2717          KM  REACH PR-1, PR-2 plus culvert PRC-1
2718          KM  ROUTE FLOWS FROM COMBINE POINT AT S0A VIA PLF RE-ALIGNMENT.
2719          RS        1    FLOW      -1
2720          RC     .015    .015     .015     3500    .0014
2721          RX        0       8       16       74      154      212      220      228
2722          RY      9.5     9.6      9.7        0        0      9.7      9.6      9.5
              *
              *

2723          KK   CPSAN
2724          KM  COMBINE FLOWS FROM THE POWERLINE FLOODWAY AND THE PROPOSED SANTAN FREEWAY
2725          KM  DRAINAGE CHANNEL
              * KO      2
2726          HC        2
              *
              *
              * ****REMOVED BY CPE IN JUNE 2000 IN FAVOR OF SANDB AND PWRDB
              * ****DIVERSIONS LOCATED UPSTREAM.
              * KK*DBRAY
              * KM       BASIN TO WITHDRAW FLOW FROM POWERLINE FLOODWAY
              * KO       3
              * DI RAYDB     1200
              * DI       0    1000     1001     1500     4500    14500
              * DQ       0       0        1      500     3500    13500
              *
              *

2727          KK  PWREMF
2728          KM  ROUTE FLOW FROM RE-ALIGNED POWERLINE FLOODWAY TO EMF VIA
2729          KM  NEW CHANNEL ALONG SANTAN FREEWAY ALIGNMENT
2730          KM  REACH ET-1
              * KO                                21
2731          RS        3    FLOW      -1
2732          RC     .025    .025     .025     3850    .0005
2733          RX        0       8       16       74      154      212      220      228
2734          RY      9.5     9.6      9.7        0        0      9.7      9.6      9.5
              *
              *
```

1 HEC-1 INPUT PAGE 75

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

2735          KK  EMFPOW
2736          KM  COMBINE FLOW FROM THE POWERLINE FLOODWAY WITH FLOW IN THE EMF
              * KO      2
2737          HC        2
              *
              *

2738          KK  POWTWI
2739          KM  ROUTE EMF FLOW TO WILLIAMS FIELD ROAD VIA THE EMF
2740          KM  THIS SECTION IS CONCRETE LINED TO PAST POWER ROAD BRIDGE
2741          RS        2    FLOW      -1
2742          RC      .03    .012      .03     4750    .0003
2743          RX        0     500      520      553      693      726      740      742
2744          RY       14      12       11        0        0       11       11       12
              *
              *

2745          KK     80B
2746          KM  BASIN 80B
2747          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2748          KM  L=      1.5  Lca=      .9   S=    18.4  Kn= .044  LAG=   41.9
2749          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
              * KO                                21
2750          BA    1.12
2751          LG     .13     .17     6.80      .18    48.00
2752          UI     90.    105.    319.     433.     515.     614.     754.    1063.    1032.     814.
2753          UI    687.    563.    464.     359.     213.     155.     136.     90.      73.      28.
2754          UI     28.     28.     28.      28.      28.       0.       0.       0.       0.       0.
2755          UI      0.      0.      0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

2756          KK    R80B
2757          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO                                21
2758          DT    D80B       4
2759          DI       0   10000
2760          DQ       0   10000
              *
              *
              * Subbasin S1B routed to EMFWIL per discussions with the FCDMC as part of the
              * Chandler Heights/Rittenhouse Basin Design Project.         QAZ
              *
              *

2761          KK     81B
```

```
2762          KM  BASIN 81B
2763          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2764          KM  L=      1.1  Lca=      .4   S=     6.9  Kn= .033  LAG=  24.7
2765          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2766          BA     .84
2767          LG     .10      .25    4.70     .45   67.00
2768          UI    115.     393.    631.    857.   1343.   1088.    796.    566.    296.    185.
2769          UI    115.      39.     35.     35.      0.      0.      0.      0.      0.      0.
```



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

2770          UI     0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2771          KK    R81B
2772          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2773          KO       3                              21
2774          DI    D81B      35
2775          DI       0   10000
2776          DQ       0   10000
              *
              * 81B to be combined with 80B and exported to EMF routing model by 80B81B
              * EMFWIL to combine 80B81B with flow from POWTWI for this model
              *    qaz
              *
              *

2777          KK  80B81B
2778          KM  COMBINE FLOWS FROM 80B & 81B AND EXPORT TO ROUTING MODEL
2779          KO                                     21
2780          HC       2
              *
              *

2781          KK  EMFWIL
2782          KM  COMBINE FLOWS INTO THE EMF WEST OF WILLIAMS AFB FROM 80B, 81B, EMF POWERLINE
              * KO      2
2783          HC       2
              *
              *

2784          KK  WILTSF
2785          KM  ROUTE EMF FLOW FROM WILLIAMS FIELD ROAD TO THE SOUTHERN PACIFIC RAILROAD
2786          KM  (AT RITTENHOUSE ROAD)
2787          RS       3    FLOW      -1
2788          RC     .03     .022     .03    5000   .0003
2789          RX       0      500     520     553     693     726     740     742
2790          RY      14       12      11       0       0      11      11      12
              *
              *
              * KKEMFRTJ       Hydrograph name changed by Dibble & Associates to avoid two
              * KM              different hydrographs with the same name.
              * KM COMBINE 81A & 81B AND RITTENHOUSE(HYDROGRAPH WILTSF, FROM EMFWIL)
              * HC      2
              *
              *
              * THE NEXT KK BLOCKS COME FROM THE QUEEN CREEK ADMS
              *
              * ********** UPDATED TO GREEN-AMPT **********
              *
```



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

2791          KK  SUB258
2792          KM  FINAL COUNTY BASIN.  PARAMETERS BASED ON EXISTING LAND-USE
2793          KM  TO MODEL FINAL COUNTY'S PRE .VS. POST DEVELOPMENT DRAINAGE CRITERIA
2794          KM  BASIN 258
2795          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2796          KM  L=      4.6  Lca=      2.5   S=    24.8  Kn= .062  LAG= 122.0
2797          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2798          BA     3.65
2799          LG      .34      .17    4.70     .42   18.00
2800          UI    110.     110.    110.    110.    110.    217.    232.    299.    386.    574.
2801          UI    583.     717.    579.    644.    772.    918.    802.    927.    927.    927.
2802          UI    927.     927.    927.    927.    834.    772.    772.    772.    866.    865.
2803          UI    583.     579.    583.    650.    605.    458.    421.    421.    381.    331.
2804          UI    315.     309.    352.    309.    211.    211.    190.    178.    178.    159.
2805          UI    136.     136.    136.    125.    101.    101.    101.    101.    101.     74.
2806          UI     63.      63.     63.     63.     63.     63.     63.     63.     29.     14.
2807          UI     14.      14.     14.     14.     14.     14.     14.     14.     14.     14.
2808          UI     14.      14.     14.     14.     14.     14.     14.     14.     14.     14.
2809          UI     14.      14.     14.     14.     14.     14.     14.     14.     14.     14.
2810          UI     14.      14.     14.     14.     14.     14.     14.     14.     14.      0.
2811          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
2812          UI      0.       0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2813          KK   RO259
2814          KM  ROUTE SUB258 TO CO262
2815          RM      11    1.57    0.20
              *
              *
              * ********** UPDATED TO GREEN-AMPT **********
              *
```

```
2816          KK  SUB260
2817          KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
2818          KM  BASIN 260
2819          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2820          KM  L=       1.0  Lca=       .5   S=    23.2  Kn= .045  LAG=  27.3
2821          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2822          BA      .98
2823          LG      .27      .25     4.80      .36    24.00
2824          UI    121.     355.     623.     813.    1175.    1413.    1018.     764.     555.     284.
2825          UI    199.     121.      55.      37.      37.      37.       0.       0.       0.       0.
2826          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              * ***************************************************************************
              * DWM    ***** UPDATED *****
              *
              * NAME OF DIVERSION WAS CHANGED BECAUSE IT HAS THE SAME NAME AS ANOTHER
              * DIVERSION
              *
              * KKRETAIN
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10


2827          KK    R260
2828          KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
2829          DT  RETDIV      69
2830          DI        0   10000
2831          DQ        0   10000
              *
              * ***************************************************************************
              * DWM    ***** PRESERVED *****
              *

2832          KK   CO262
2833          KM  COMBINE SUB260 AND RO259
2834          HC        2
              *
              *

2835          KK   RO263
2836          KM  ROUTE CO262 TO CO266
2837          RM       11    1.56    0.20
              *
              * ***********  UPDATED TO GREEN-AMPT  ***********
              *

2838          KK  SUB264
2839          KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
2840          KM  BASIN 264
2841          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2842          KM  L=       1.0  Lca=       .6   S=    20.0  Kn= .050  LAG=  32.9
2843          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2844          BA     1.00
2845          LG      .25      .25     4.70      .38    31.00
2846          UI    102.     217.     450.     584.     730.    1015.    1235.     921.     734.     572.
2847          UI    426.     228.     171.     115.      82.      31.      31.      31.      31.       0.
2848          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
2849          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              * ***************************************************************************
              * DWM    ***** UPDATED *****
              *
              * NAME OF DIVERSION WAS CHANGED BECAUSE IT HAS THE SAME NAME AS ANOTHER
              * DIVERSION
              *
              * KKRETAIN

2850          KK    R264
2851          KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
2852          DT  RETDIV      73
2853          DI        0   10000
2854          DQ        0   10000
              *
              * ***************************************************************************
              * DWM    ***** PRESERVED *****
              *
```



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


2855          KK   CO266
2856          KM  COMBINE SUB264 AND RO263
2857          HC        2
              *
              *

2858          KK   RO267
2859          KM  ROUTE CO266 TO CO270
2860          RM       11    3.31    0.20
              *
              * ***********  UPDATED TO GREEN-AMPT  ***********
              *

2861          KK  SUB268
2862          KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
2863          KM  BASIN 268
```

```
2864          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2865          KM  L=      2.0  Lca=      1.1   S=   13.4  Kn= .046  LAG=  55.1
2866          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2867          BA     .97
2868          LG     .23      .25     4.65     .39   34.00
2869          UI     59.      59.     122.     219.    281.    324.    365.    422.    489.    637.
2870          UI    762.     634.     536.     474.    408.    355.    301.    255.    185.    113.
2871          UI    102.      97.      63.      59.     45.     18.     18.     18.     18.     18.
2872          UI     18.      18.       0.       0.      0.      0.      0.      0.      0.      0.
2873          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
              *
              * ***************************************************************************
              * DWM   ***** UPDATED *****
              *
              * NAME OF DIVERSION WAS CHANGED BECAUSE IT HAS THE SAME NAME AS ANOTHER
              * DIVERSION
              *
              * KKRETAIN

2874          KK    R268
2875          KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
2876          DT  RETDIV      68
2877          DI       0   10000
2878          DQ       0   10000
              *
              * ***************************************************************************
              * DWM   ***** PRESERVED *****
              *

2879          KK   CO270
2880          KM  COMBINE RUNOFF FROM RO267 AND SUB268
2881          HC       2
              *
              *
```



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

2882          KK   RO283
2883          KM  ROUTE CO282 TO CONCENTRATION POINT AT QUEEN CREEK ROAD
2884          RM      11    2.78    0.20
              *
              * THIS IS THE END OF THE QUEEN CREEK ADMS INSERT
              *
              *

2885          KK    88A
2886          KM  BASIN 88A
2887          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2888          KM  L=       .8  Lca=       .2   S=   13.2  Kn= .020  LAG=   9.2
2889          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2890          BA     .50
2891          LG     .10      .25     5.00     .40   80.00
2892          UI    549.    1709.    1208.     323.     71.      0.      0.      0.      0.      0.
2893          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
              *
              *

2894          KK    R88A
2895          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2896          DT    D88A      50
2897          DI       0   10000
2898          DQ       0   10000
              *
              *

2899          KK  88AT89
2900          KM  REACH RH-2b,RH-2a,RH-1,EXISTING CHANNEL (FCD 97-34), plus culvert RHC-1
2901          KM  ROUTE 88A TO 89A VIA THE PROPOSED CHANNEL ALONG QUEEN CREEK ROAD
2902          KM  FROM CRISMON ROAD TO ELLSWORTH ROAD
2903          RS       5    FLOW      -1
2904          RC    .025     .025     .025    5135   .0010
2905          RX       0        8       16      45      55      85      93     101
2906          RY     4.7      4.8      4.9       0       0     4.9     4.8     4.7
              *
              *

2907          KK    89A
2908          KM  BASIN 89A
2909          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2910          KM  L=      1.0  Lca=       .6   S=   19.0  Kn= .020  LAG=  13.5
2911          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2912          BA     .50
2913          LG     .10      .25     4.65     .47   80.00
2914          UI    247.     742.    1328.     891.    408.    158.     41.     38.      0.      0.
2915          UI      0.       0.       0.       0.      0.      0.      0.      0.      0.      0.
              *
              *
```



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

2916          KK    R89A
2917          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2918          DT    D89A      50
2919          DI       0   10000
2920          DQ       0   10000
```

```
             *
             *

2921         KK    C89A
2922         KM  COMBINE FLOWS FROM 88A AND 89A AT QUEEN CREEK ROAD AND ELLSWORTH ROAD
2923         HC       2
             *
             *

2924         KK  89ATRI
2925         KM  ROUTE 89A TO RITTENHOUSE ROAD VIA THE PROPOSED CHANNEL ALONG QUEEN CREEK ROAD
2926         KM  FROM ELLSWORTH ROAD TO RITTENHOUSE ROAD
2927         KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN.
2928         RS       5    FLOW      -1
2929         RC    .025    .025    .025    3145   .0005
2930         RX       0      10      26      39      49      72      78     100
2931         RY    12.2     9.7     5.7       0       0     5.7     9.7    12.2
             *
             *

2932         KK    C283
2933         KM  COMBINE FLOWS FROM QUEEN CREEK ADMS AND EC ADNP AT QUEEN CREEK ROAD AND
2934         KM  RITTENHOUSE ROAD.
             * KO             2
2935         HC       2
             *
             *

2936         KK  283T90
2937         KM  ROUTE FLOWS FROM CONCENTRATION POINT 283 AT QUEEN CREAK ROAD NORTH IN
2938         KM  RITTENHOUSE CHANNEL TO THE HALF MILE STREET BETWEEN QUEEN CREEK ROAD AND
2939         KM  GERMANN ROAD (RYAN STREET)
2940         KM
2941         KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #5).
2942         KM
             * KO             2
2943         RS       3    FLOW      -1
2944         RC    .025    .025    .025    4400   .0005
2945         RX       0      22      28      51      61      83      90     108
2946         RY    11.2     9.7     5.7       0       0     5.7     9.7    11.2
             *
             *

2947         KK     90A
2948         KM  BASIN 90A
2949         KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2950         KM  L=       .6  Lca=       .2   S=   24.2  Kn= .038  LAG=  12.8
2951         KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2952         BA     .48
1                                     HEC-1 INPUT                                               PAGE 82

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

2953         LG     .10     .25    4.60     .49   62.00
2954         UI    269.    789.   1351.    812.    319.    113.     39.      0.      0.      0.
2955         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

2956         KK    R90A
2957         KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2958         DT    D90A      42
2959         DI       0   10000
2960         DQ       0   10000
             *
             *

2961         KK    C90A
2962         KM  COMBINE FLOWS FLOW C283 AND SUBBASIN 90 AT RYAN STREET ALIGNMENT
             * KO             2
2963         HC       2
             *
             *

2964         KK   90ATB
2965         KM  ROUTE FLOWS FROM SUBBASIN 90A TO 90B VIA CHANNEL
2966         KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #4).
2967         KM
             * KO             2
2968         RS       2    FLOW       1
2969         RC    .025    .025    .025    4400   .0005
2970         RX       0      22      28      51      61      83      90     108
2971         RY    11.2     9.7     5.7       0       0     5.7     9.7    11.2
             *
             *

2972         KK     87A
2973         KM  BASIN 87A
2974         KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2975         KM  L=      1.0  Lca=       .5   S=   24.8  Kn= .020  LAG=  11.7
2976         KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2977         BA     .49
2978         LG     .10     .25    5.00     .40   80.00
2979         UI    333.    979.   1448.    720.    221.     66.      0.      0.      0.      0.
2980         UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

2981         KK    R87A
```

```
2982          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2983          DT    D87A       49
2984          DI       0    10000
2985          DQ       0    10000
              *
```



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


2986          KK   87A7B
2987          KM  ROUTE 87A TO 87B VIA SHEET FLOW
2988          RS       6    FLOW       -1
2989          RC    .040    .040    .040    2640    .0056
2990          RX       0     500    1000    1005    1006    1011    1511    2011
2991          RY       1      .5       0       0       0      .5       1     1.5
              *
              *


2992          KK     87B
2993          KM  BASIN 87B
2994          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2995          KM  L=        .9  Lca=        .5   S=   11.6  Kn= .020  LAG=  12.8
2996          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2997          BA      .49
2998          LG      .10      .25     5.00      .40    80.00
2999          UI    275.     809.    1385.     833.     327.    116.     40.      0.      0.      0.
3000          UI      0.       0.       0.       0.       0.      0.      0.      0.      0.      0.
              *
              *


3001          KK    R87B
3002          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3003          DT    D87B       49
3004          DI       0    10000
3005          DQ       0    10000
              *
              *


3006          KK     C87
3007          KM  COMBINE FLOW FROM SUBBASINS 87A AND 87B
3008          HC       2
              *
              *


3009          KK  87T88B
3010          KM  ROUTE S87 TO S88 VIA GERMANN ROAD
3011          RS       8    FLOW       -1
3012          RC    .045    .025    .045    5280    .002
3013          RX       0    1000    1005    1010    1050    1060    1560    2060
3014          RY      14      13      18      12      11      14    14.5      15
              *
              *


3015          KK     88B
3016          KM  BASIN 88B
3017          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3018          KM  L=        .9  Lca=        .6   S=   21.2  Kn= .020  LAG=  12.8
3019          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3020          BA      .50
3021          LG      .10      .25     5.00      .40    80.00
3022          UI    279.     819.    1402.     843.     331.    117.     40.      0.      0.      0.
3023          UI      0.       0.       0.       0.       0.      0.      0.      0.      0.      0.
              *
              *
```



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


3024          KK    R88B
3025          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3026          DT    D88B       50
3027          DI       0    10000
3028          DQ       0    10000
              *
              *


3029          KK    C88B
3030          KM  COMBINE FLOWS FROM SUBBASINS 88A AND 88B
3031          HC       2
              *
              *


3032          KK  88T89B
3033          KM  ROUTE S88 (CRISMON ROAD) TO S89B (ELLSWORTH ROAD) VIA GERMANN ROAD
3034          RS      11    FLOW       -1
3035          RC    .045    .025    .045    5280    .004
3036          RX       0    1000    1005    1010    1050    1060    1560    2060
3037          RY      14      13      18      12      11      14    14.5      15
              *
              *


3038          KK     89B
3039          KM  BASIN 89B
3040          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3041          KM  L=        .9  Lca=        .5   S=   23.2  Kn= .020  LAG=  11.7
3042          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3043          BA      .50
```

```
3044          LG     .10     .25    4.80     .43   80.00
3045          UI    336.    987.   1460.    726.    223.     67.      0.      0.      0.      0.
3046          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3047          KK    R89B
3048          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3049          DT    D89B      49
3050          DI       0   10000
3051          DQ       0   10000
              *
              *

3052          KK    C89B
3053          KM  COMBINE FLOWS FROM SUBBASINS 89A AND 89B
3054          HC       2
              *
              *
```



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

3055          KK  89TD90
3056          KM  ROUTE S89B (ELLSWORTH ROAD) TO S90B (AT RITTENHOUSE ROAD) VIA GERMANN ROAD
3057          RS      11    FLOW      -1
3058          RC    .045    .025    .045    8818   .0045
3059          RX       0    1000    1005    1010    1050    1060    1560    2060
3060          RY      14      13      18      12      11      14    14.5      15
              *
              *

3061          KK     90B
3062          KM  BASIN 90B
3063          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3064          KM  L=      2.0  Lca=      1.2   S=   15.3  Kn= .042  LAG=  49.8
3065          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3066          BA     .82
3067          LG     .22     .25    4.65     .38   31.00
3068          UI     56.     56.    147.    232.    283.    327.    379.    444.    588.    709.
3069          UI    583.    490.    427.    359.    306.    259.    187.    117.     96.     91.
3070          UI     56.     56.     28.     17.     17.     17.     17.     17.     17.      0.
3071          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
3072          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3073          KK    R90B
3074          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3075          DT    D90B      23
3076          DI       0   10000
3077          DQ       0   10000
              *
              *

3078          KK     C90
3079          KM  COMBINE FLOWS FROM 90A AND 90B
3080          HC       3
              *
              *

3081          KK   90T91
3082          KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #3).
3083          KM
3084          RS       5    FLOW      -1
3085          RC    .025    .025    .025    6400   .0005
3086          RX       0      30      36      60      88     108     114     132
3087          RY     9.7     7.5       6       0       0       6     7.5     9.7
              *
              *

3088          KK     85
3089          KM  BASIN 85
3090          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3091          KM  L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
3092          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3093          BA    1.00
```



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

3094          LG     .15     .25    4.35     .51   55.00
3095          UI    131.    422.    698.    929.   1452.   1359.    991.    725.    463.    226.
3096          UI    161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
3097          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3098          KK     R85
3099          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3100          DT     D85      84
3101          DI       0   10000
3102          DQ       0   10000
              *
              *

3103          KK   85T86
3104          KM  ROUTE S85 TO S86 VIA WAFB SOUTH PERIMETER CHANNEL
```

```
3105          RS       4    FLOW      -1
3106          RC   0.055   0.035   0.055    5280   .0039
3107          RX       0     500    1000    1013    1028    1041    1541    2041
3108          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              *

3109          KK      86
3110          KM  BASIN 86
3111          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3112          KM  L-      2.0  Lca-       .5   S-    15.0  Kn- .030  LAG-  25.8
3113          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3114          BA    1.00
3115          LG     .15      .25     4.55      .45    55.00
3116          UI    131.     420.     695.     925.    1446.    1354.     987.     722.     461.     225.
3117          UI    160.      89.      40.      40.      40.       0.       0.       0.       0.       0.
3118          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

3119          KK     R86
3120          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3121          DT     D86       85
3122          DI       0    10000
3123          DQ       0    10000
              *
              *

3124          KK     C86
3125          KM  COMBINE 85 AND 86 AT PECOS ROAD AND SOSSAMAN ROAD
3126          HC       2
              *
              *
```

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

3127          KK   86T91
3128          KM  ROUTE S86 TO S91 VIA WAFB SOUTH PERIMETER CHANNEL. Grassy v-3ft/sec
3129          RS       7    FLOW      -1
3130          RC    0.05   0.035    0.05    5500   .0025
3131          RX       0     500    1000    1013    1028    1041    1541    2041
3132          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              *

3133          KK      91
3134          KM  BASIN 91
3135          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3136          KM  L-      1.4  Lca-       .6   S-    18.4  Kn- .030  LAG-  22.7
3137          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3138          BA     .46
3139          LG     .15      .25     4.65      .42    55.00
3140          UI     68.     262.     399.     586.     792.     554.     390.     234.     116.      73.
3141          UI     28.      21.      21.       0.       0.       0.       0.       0.       0.       0.
3142          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

3143          KK   RET91
3144          KM  RETAIN 100YR 2HR VOLUME
3145          DT     D91       38
3146          DI       0    10000
3147          DQ       0    10000
              *
              *

3148          KK     81A
3149          KM  BASIN 81A
3150          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3151          KM  L-      3.3  Lca-      1.9   S-    16.4  Kn- .029  LAG-  49.0
3152          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3153          BA    1.81
3154          LG     .14      .25     4.70      .41    58.00
3155          UI    125.     125.     341.     523.     642.     737.     863.    1019.    1359.    1576.
3156          UI   1258.    1066.     922.     777.     656.     545.     386.     222.     209.     177.
3157          UI    125.     117.      38.      38.      38.      38.      38.      38.      38.       0.
3158          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
3159          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *
              *

3160          KK    R81A
3161          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3162          DT    D81A        5
3163          DI       0    10000
3164          DQ       0    10000
              *
              *
```

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

3165          KK    CP91
3166          KM  COMBINE 91, 90, 86 81A AT RITTENHOUSE CHANNEL
3167          HC       4
              *
```

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                   *

3168               KK  91TEMF
3169               KM  ROUTE 91 TO EMF
3170               KO                                    21
3171               RS       1    FLOW     -1
3172               RC   0.035   0.022   0.035    4000   0.003
3173               RX       0     200     230     240     270     280     310     410
3174               RY       9       7       6       0       0       6       7       9
                   *
                   *

3175               KK  EMFRITRevised by Dibble & Associates to remove combination at "RITTEN"
3176               KM  COMBINE HYDROGRAPHS EMFRT1 AND 91TEMF
                   * KO      2
3177               HC        2
                   *
                   * THIS PORTION OF THE MODEL IS USED TO DEVELOPE HYDROGRAPHS FOR THE CAP1A AND
                   * CAP1B OVERCHUTES. ALL PARAMETERS ARE FROM THE SEMESA ADMS DATED 1997
                   *
                   *
3178               KM  *******  \/ \/ \/ modifications by Dibble & Associates \/ \/ \/ **********
3179               KM
3180               KM  On 12.16.97 - made changes to sub-basins 62C & 62D per County
3181               KM  On 12.17.97 - revised detention Basin DB82A1
3182               KM  On 12.18.97 - Siphon Draw basin to be on-line facility, rearranged sequence
3183               KM  On 12.19.97 - Basin MN4B near Powerline Floodway, data based on grading plan
3184               KM  - Revised Channel Routing parameters for Area 1
3185               KM  On 01.05.98 - Revised Detention Basin DB82A1 & DB82B.
3186               KM  - Coordinated file with FB.
3187               KM  On 01.12.98 - Revised Hydrology per County '97 Land Use Parameters
3188               KM  - File Updated by DDMS
3189               KM  - Retention revised per County '97 Land Use Parameters
3190               KM  On 01.14.98 - Revised routing along the Santan Alignment
3191               KM  On 01.19.98 - Revised channel routing parameters, Area 2 for channel design.
3192               KM  On 01.26.98 - Revised channel routing slopes in non-ADMP design areas to
3193               KM  match the MAG97 values found in file FUTSOUTH.DAT from FCDMC
3194               KM  On 01.26.98 - Revised wording at CAP1A and CAP1B to reflect 217 cfs per
3195               KM  overchute location, not per pipe.  This per Valerie Swick.
3196               KM  On 01.27.98 - Copied the KK 91 to KK EMFRIT sequence from FUTSOUTH.DAT
3197               KM  and revised diagram sequence to add in Santan Fwy channel.
3198               KM  On 01.27.98 - Slope and NSTEPS values for some natural channels input from
3199               KM  the District-supplied file "FUTSOUTH.DAT".
3200               KM  On 01.28.98 - Revised hydrograph names near EMF at Rittenhouse area.
3201               KM  On 02.12.98 - Revised minor station error in channel route 65AT66, RX record
3202               KM  On 02.23.98 - Revised per
3203               KM  FCDMC comments:  Reworded KM record for route 65AT66.
3204               KM  Length for route 65T66 revised to 2400 feet.
3205               KM  KM added to 78B to explain why no retention.
3206               KM  Added channel route for CP82A4 to CP82A5.
1                                                  HEC-1 INPUT                                                PAGE 89

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

3207               KM  Added 0.25 ratio @ Basin 75, removed retention
3208               KM  On 02.24.98 - Revised Rittenhouse Channel routing to reflect plans
3209               KM  per FCD Contract No. 97-34 (Phase 2)
3210               KM
3211               KM  On 03.03.98 - Received This File as FINAL HYDROLOGY from the FCDMC
3212               KM  On 03.04.98 - Revised flow routing to show the PLF connecting to
3213               KM  the Santan Channel.  Also re-ordered subbasin 80a
3214               KM  to enter the system at the proper location.
3215               KM  On 03.06.98 - Revised KM record for EMFKNX to delete reference to C76A.
3216               KM  On 03.10.98 - Revised preliminary channel sizes from design data.
3217               KM  Added routing reaches represented in design. (Area 1).
3218               KM  On 03.12.98 - Regraded Crismon Basin to avoid ADWR jurisdictional dam.
3219               KM  On 03.13.98 - Revised Siphon Draw Basin to avoid ADWR jurisdictional dam.
3220               KM  On 03.24.98 - Revised normal depth channel routing per Area 2 channel design.
3221               KM  On 04.22.98 - Submitted Hydrology to County.
3222               KM  On 05.20.98 - Revised Hydrology per County Comments
3223               KM  On 06.11.98 - Revised channel properties to reflect earth channels
3224               KM  On 06.12.98 - Submitted file to County (This is a pre-final submittal)
3225               KM
3226               KM  On 06.18.98 - Added combine at Knox Road for better flowrate resolution.
3227               KM
3228               KM  On 07.17.98 - Revised per FCD review comments.  Channel routings revised to
3229               KM  follow the ADMP Preliminary Design Plans.  More verbal
3230               KM  descriptions for channel routings added.
3231               KM
3232               KM  On 07.24.98 - This is the final submittal HEC-1 input file.
3233               KM
3234               KM  On 08.06.98 -Back checked entire file against FCDMC review comments printout.
3235               KM
3236               KM  On 10.21.98 -Revised routing at Elliot basin for prelim. 30% design.
3237               KM
3238               KM  On 10.27.98 -Revised divert for retention at Elliot Basin.
3239               KM
3240               KM  On 01.15.99 -File submitted as part of Elliot Basin Addendum to the ADMP.
3241               KM
3242               KM  *******  ^^^^^ modifications by Dibble & Associates ^^^^^   **************
                   *
3243               ZZ
1
           SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW
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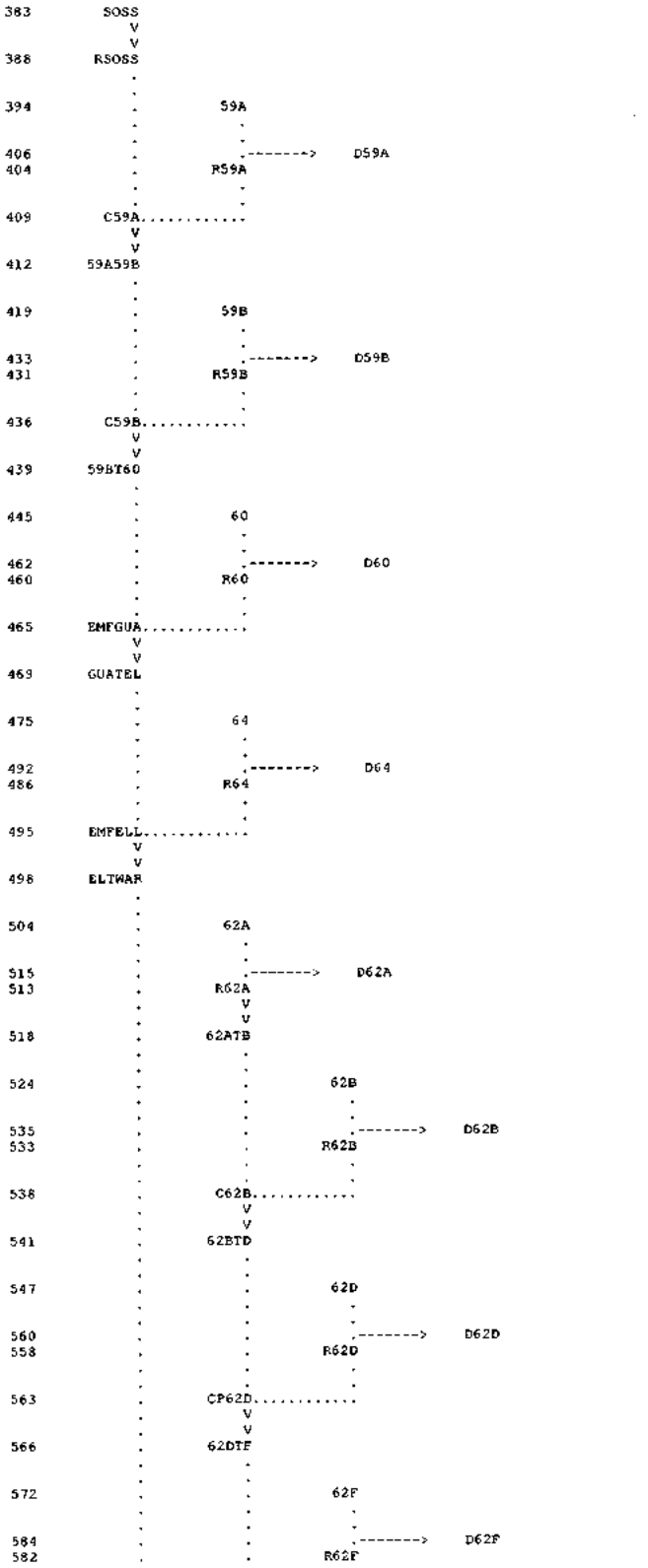
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445 60
462 D60
460 R60
465 EMFGUA
469 GUATEL
475 64
492 D64
486 R64
495 EMFELL
498 ELTWAR
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524 62B
535 D62B
533 R62B
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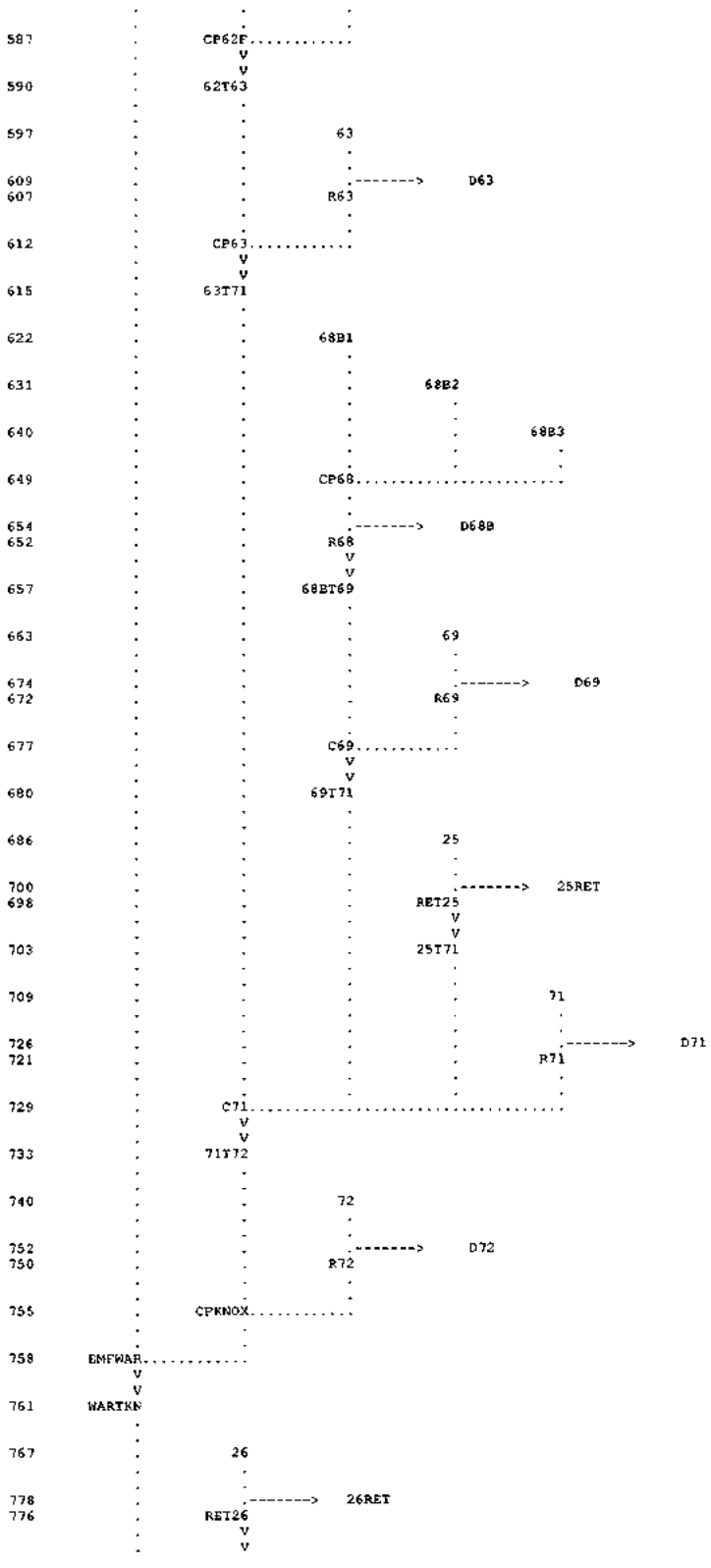
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657 68BT69
663 69
674 D69
672 R69
677 C69
680 69T71
686 25
700 25RET
698 RET25
703 25T71
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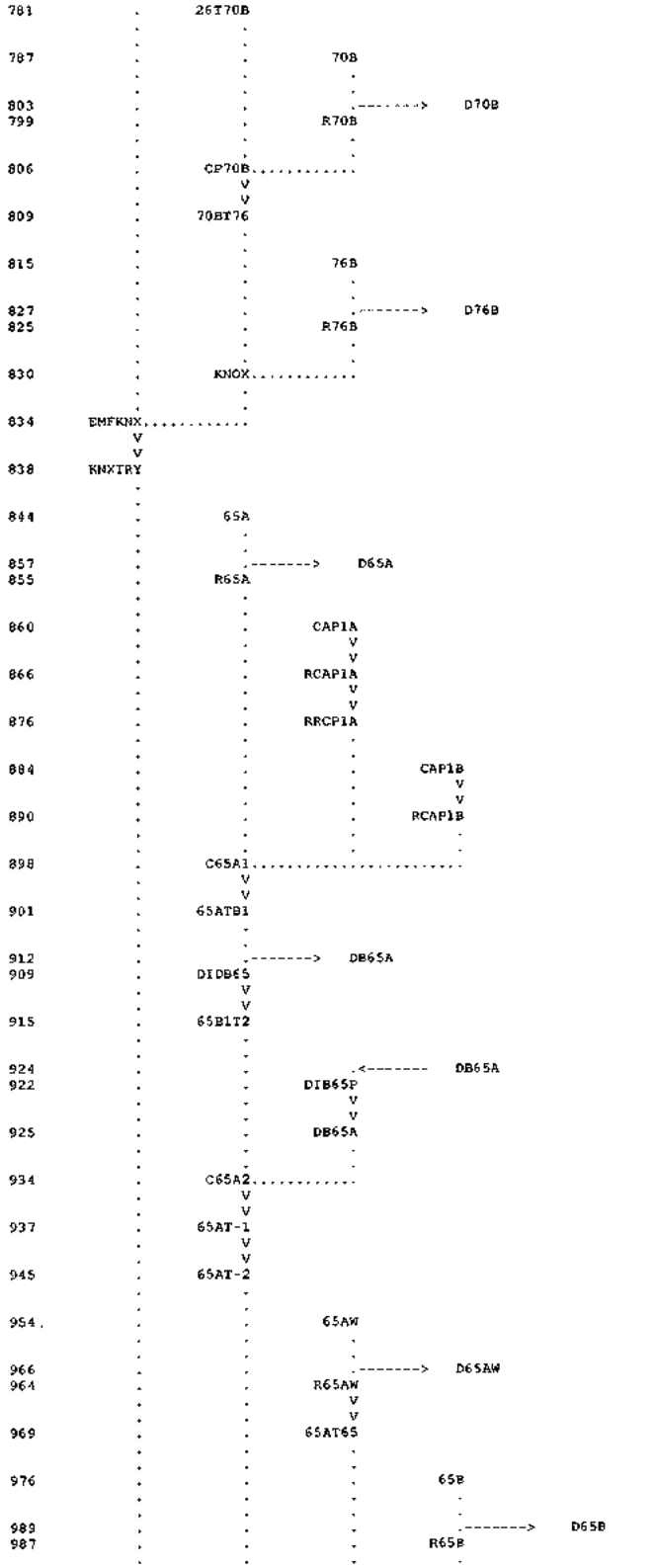
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855 R65A
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866 RCAP1A
876 RRCP1A
884 CAP1B
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901 65ATB1
912 DB65A
909 DIDB65
915 65B1T2
924 DB65A
922 DIB65P
925 DB65A
934 C65A2
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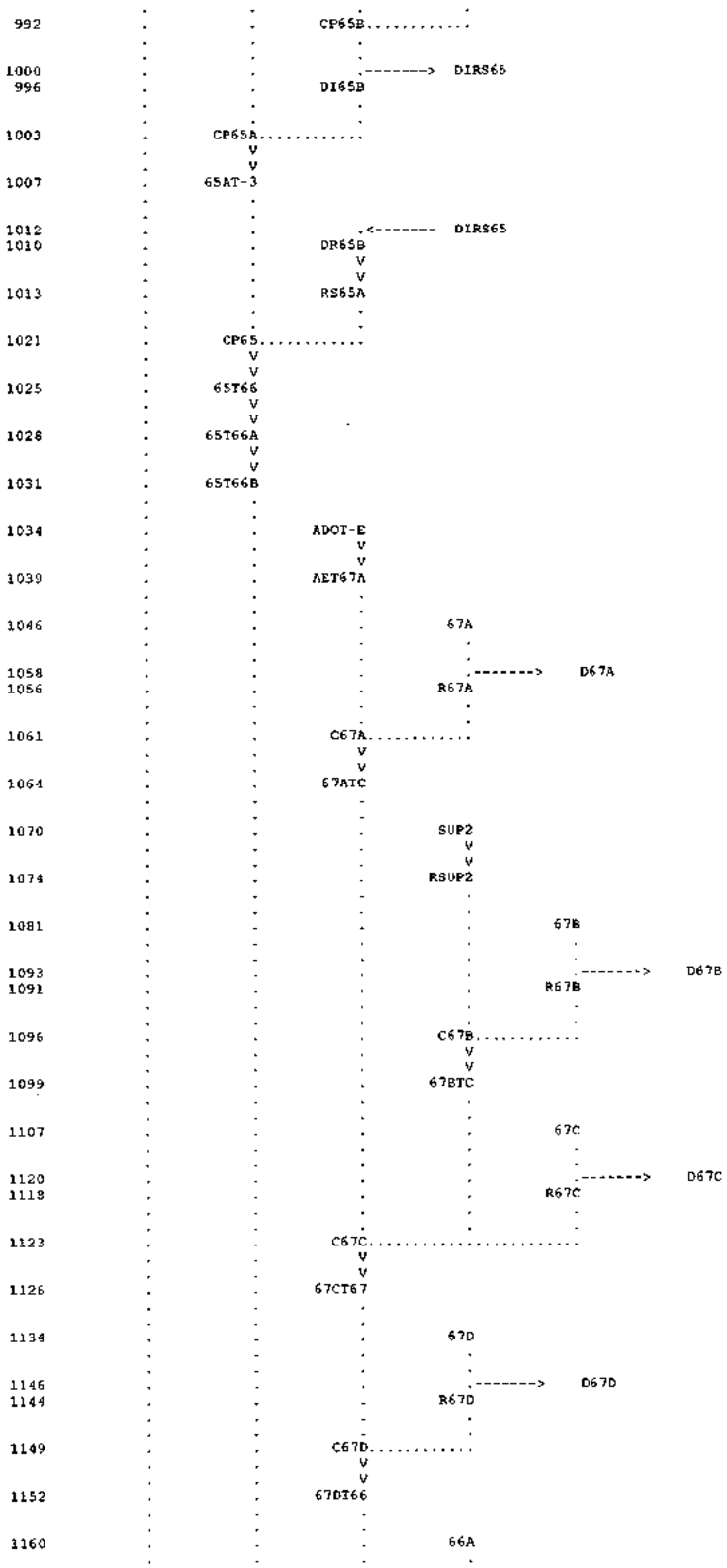
987 R65B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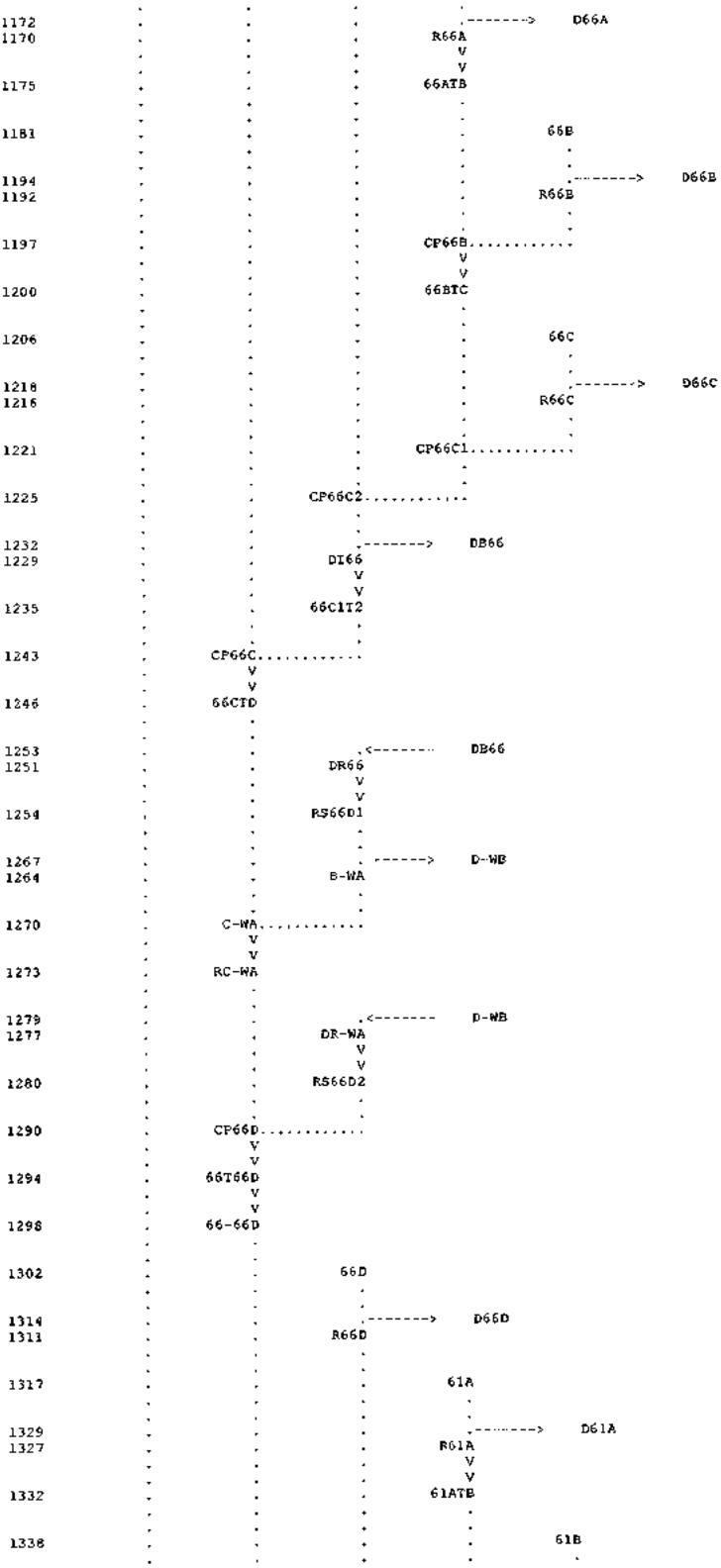
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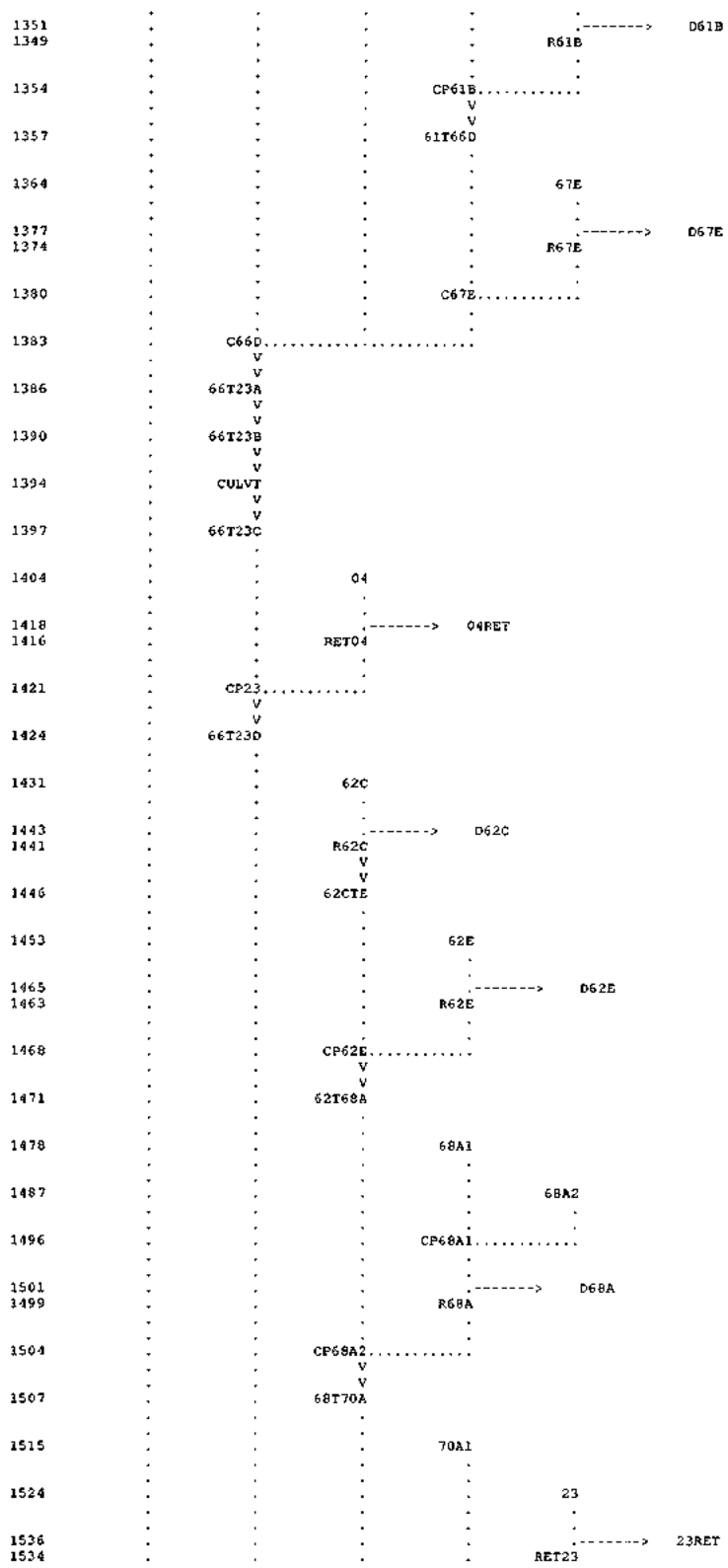
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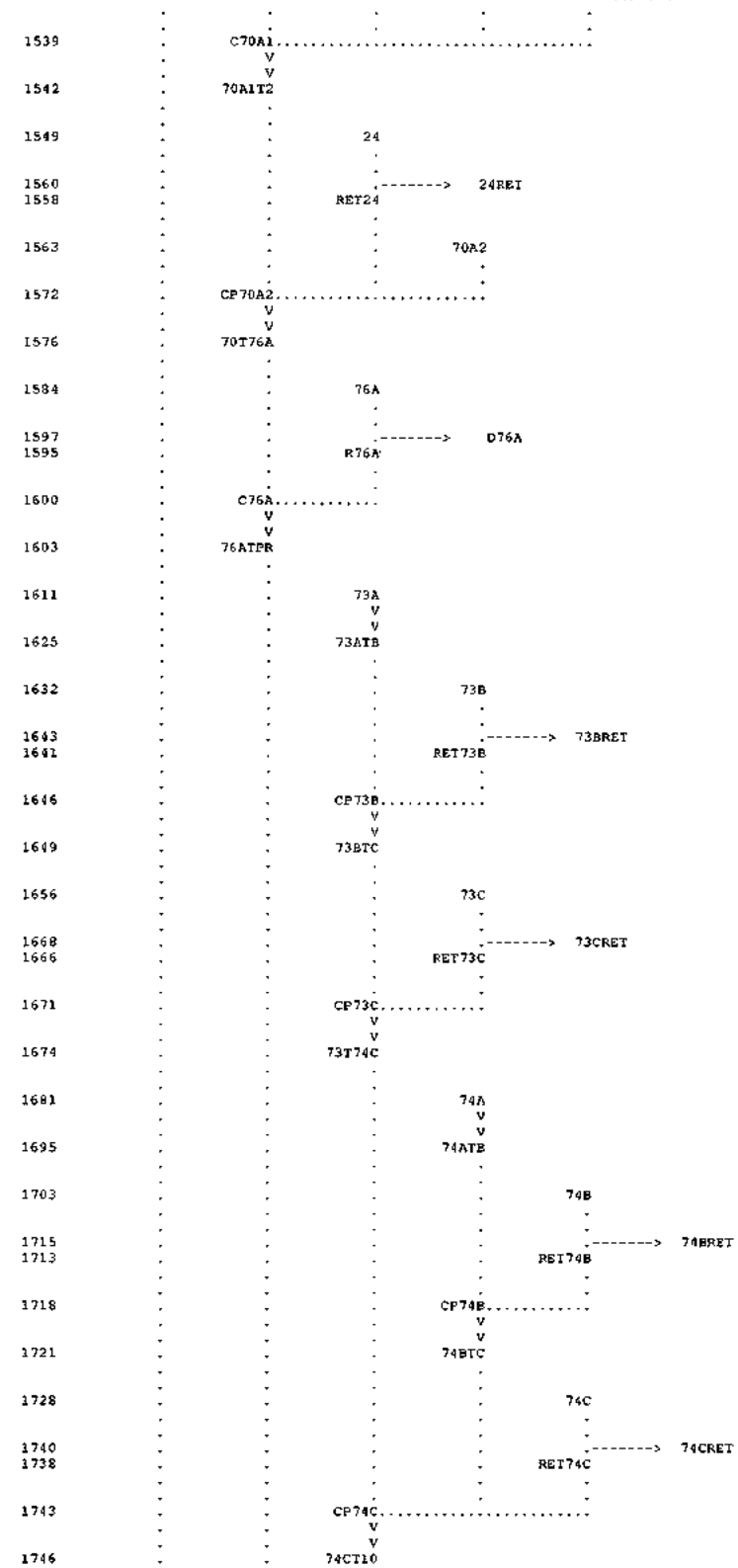
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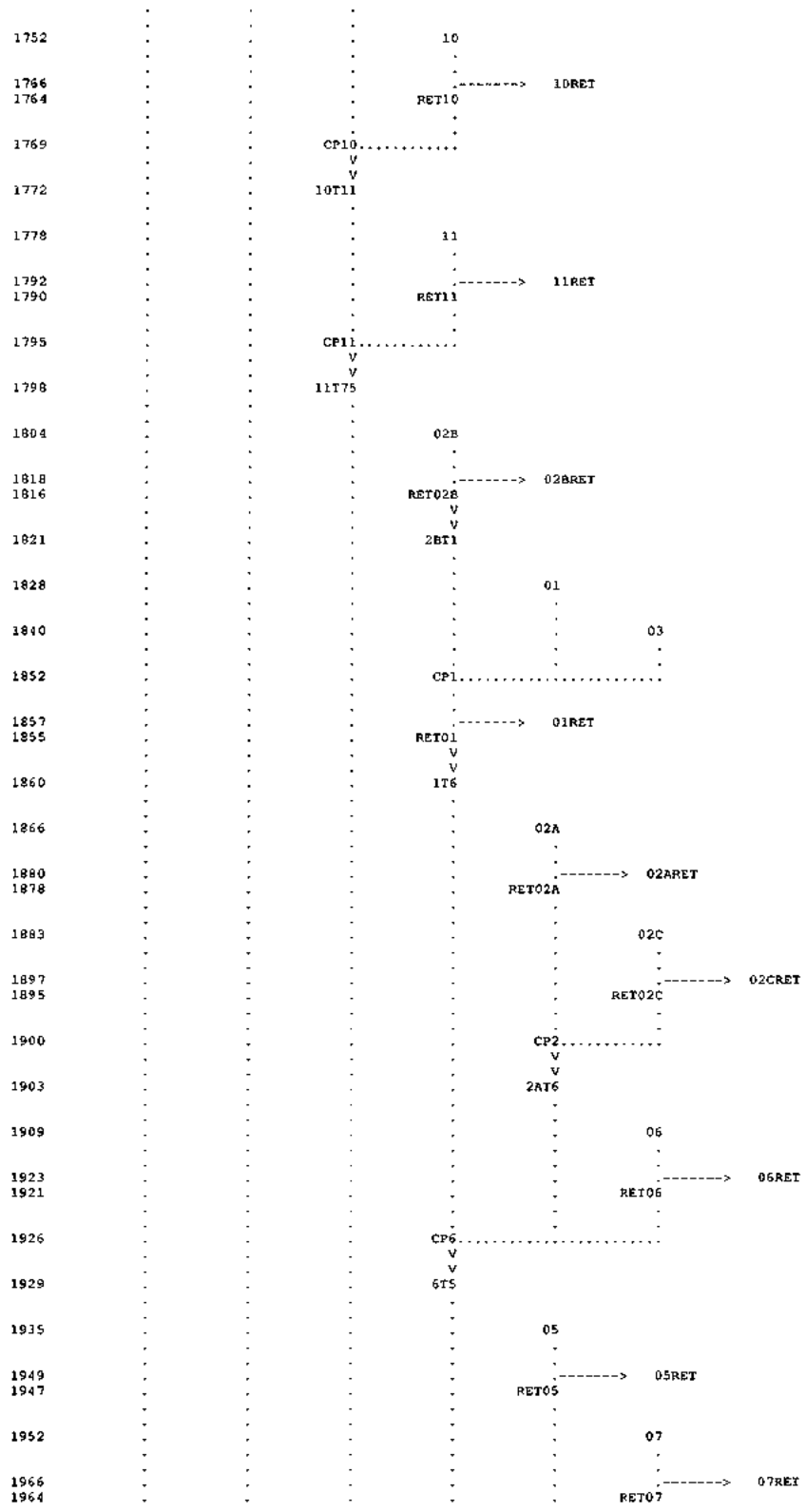
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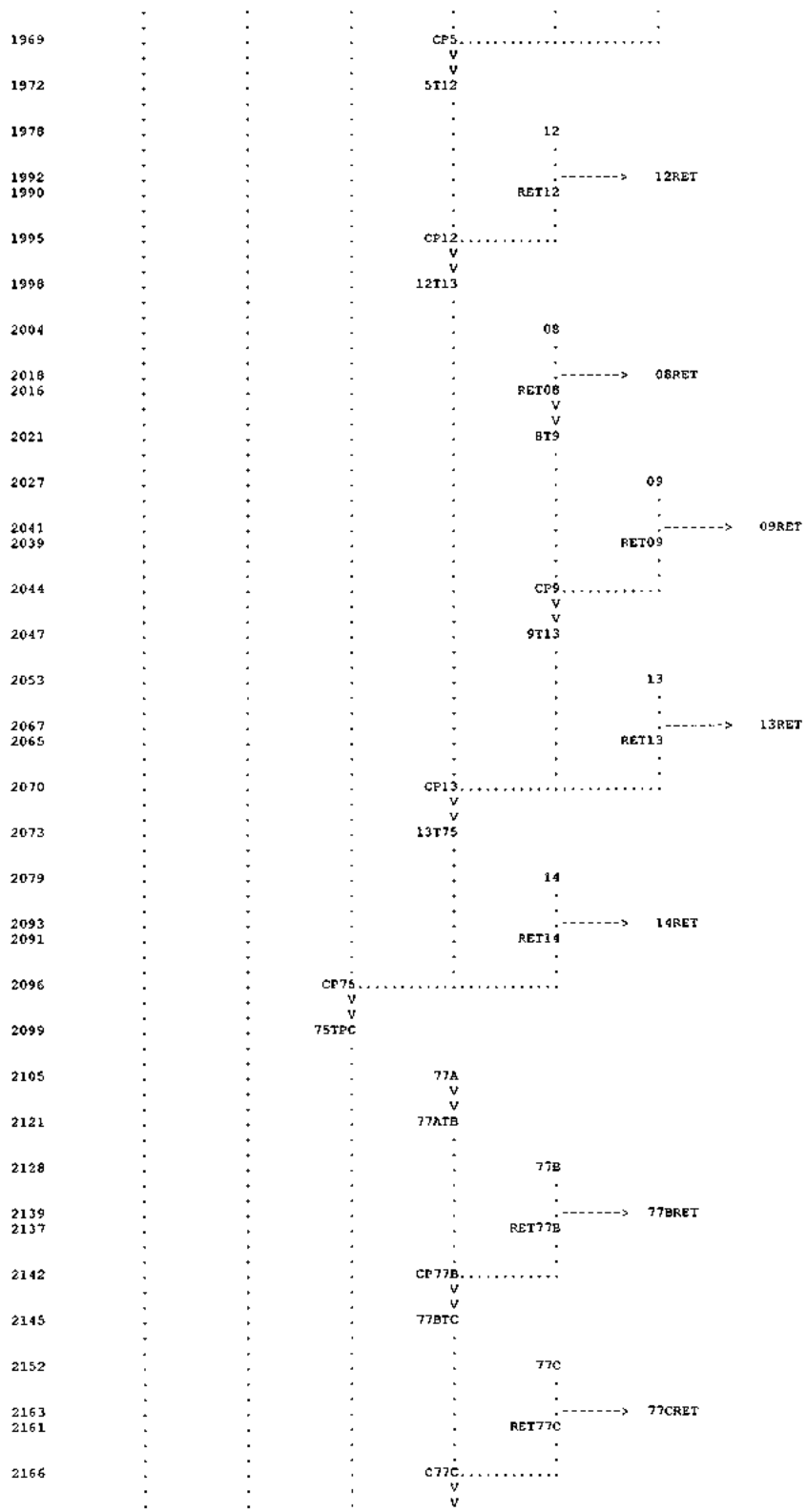
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2039
RET09
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CP9
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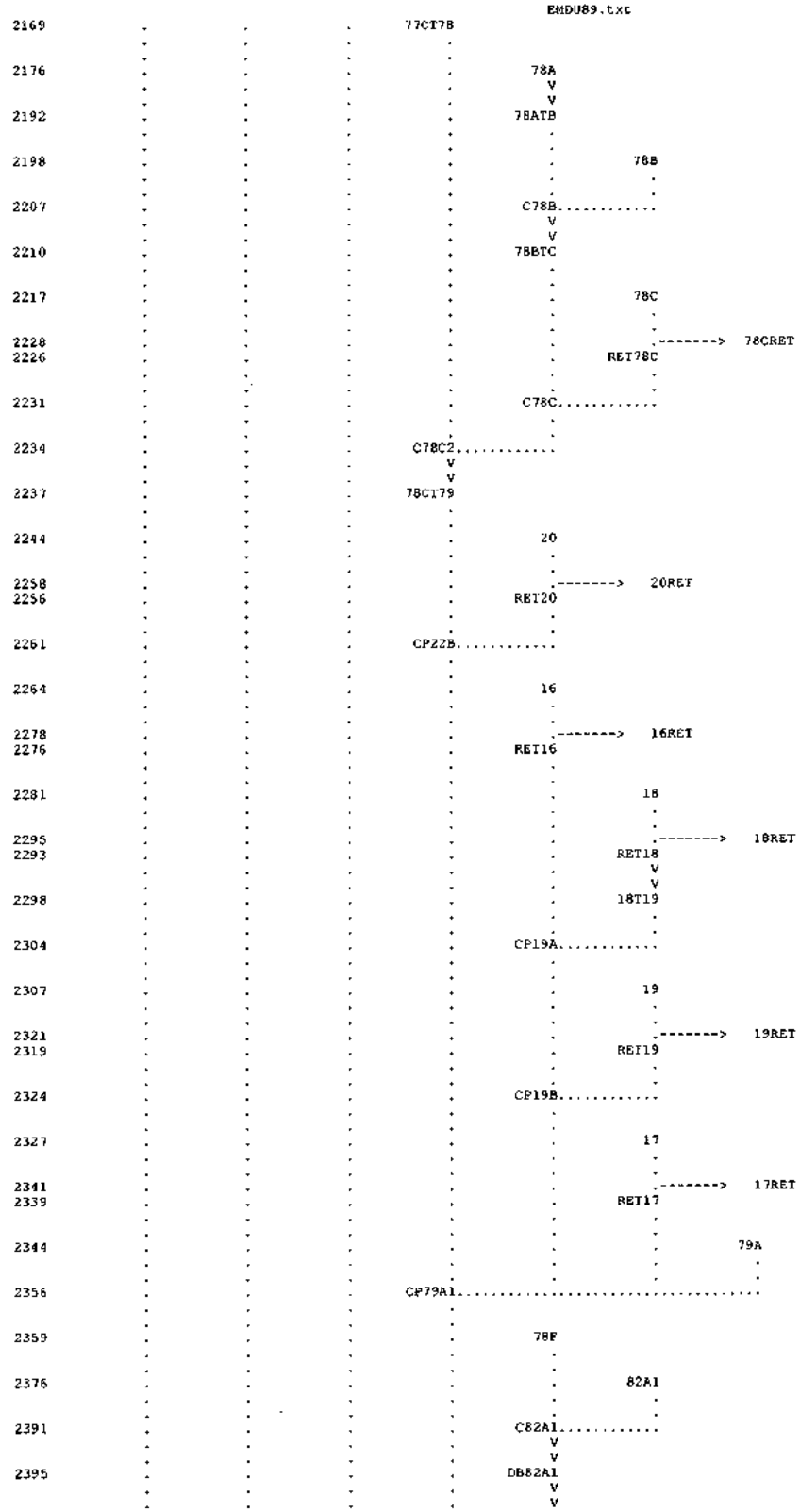
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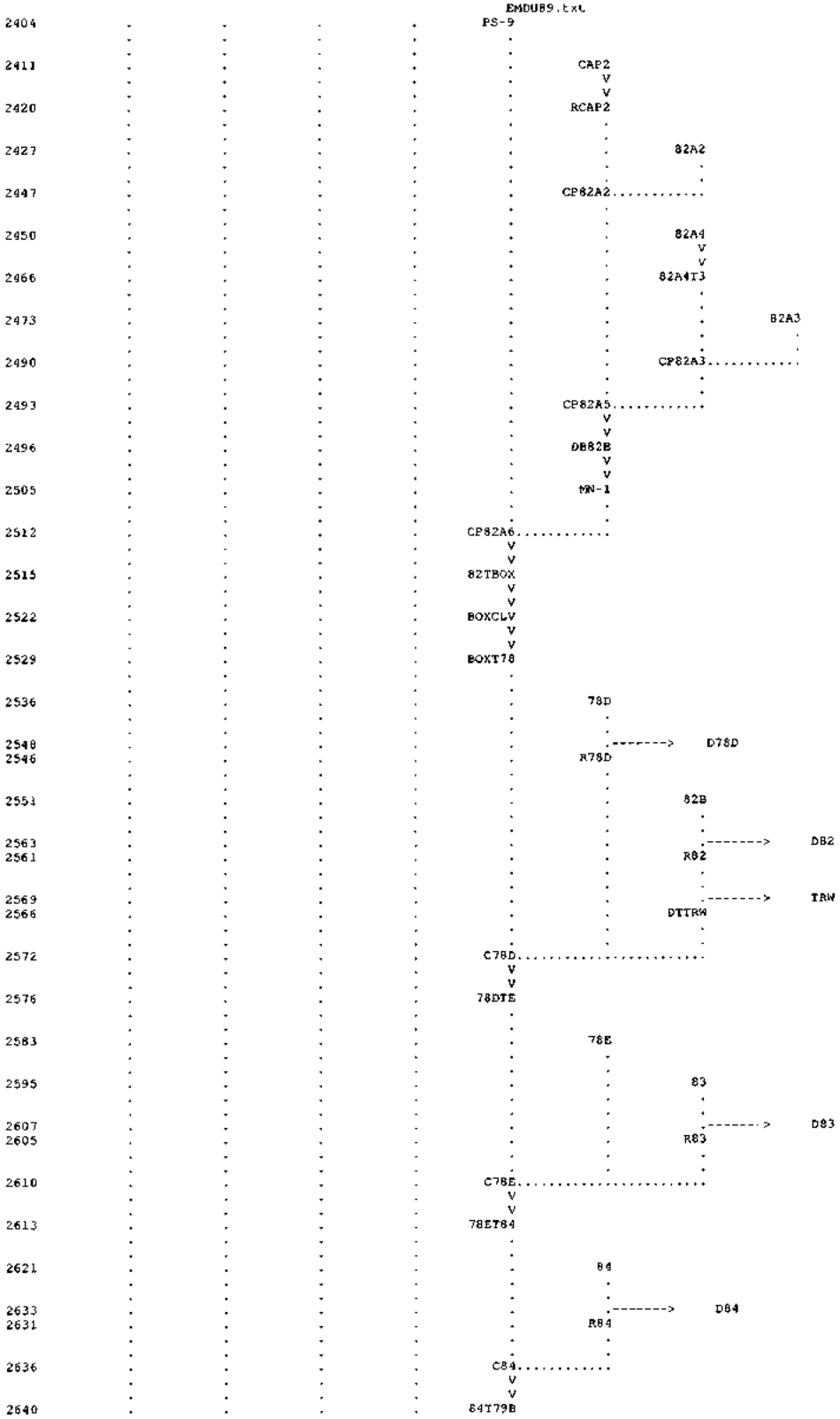
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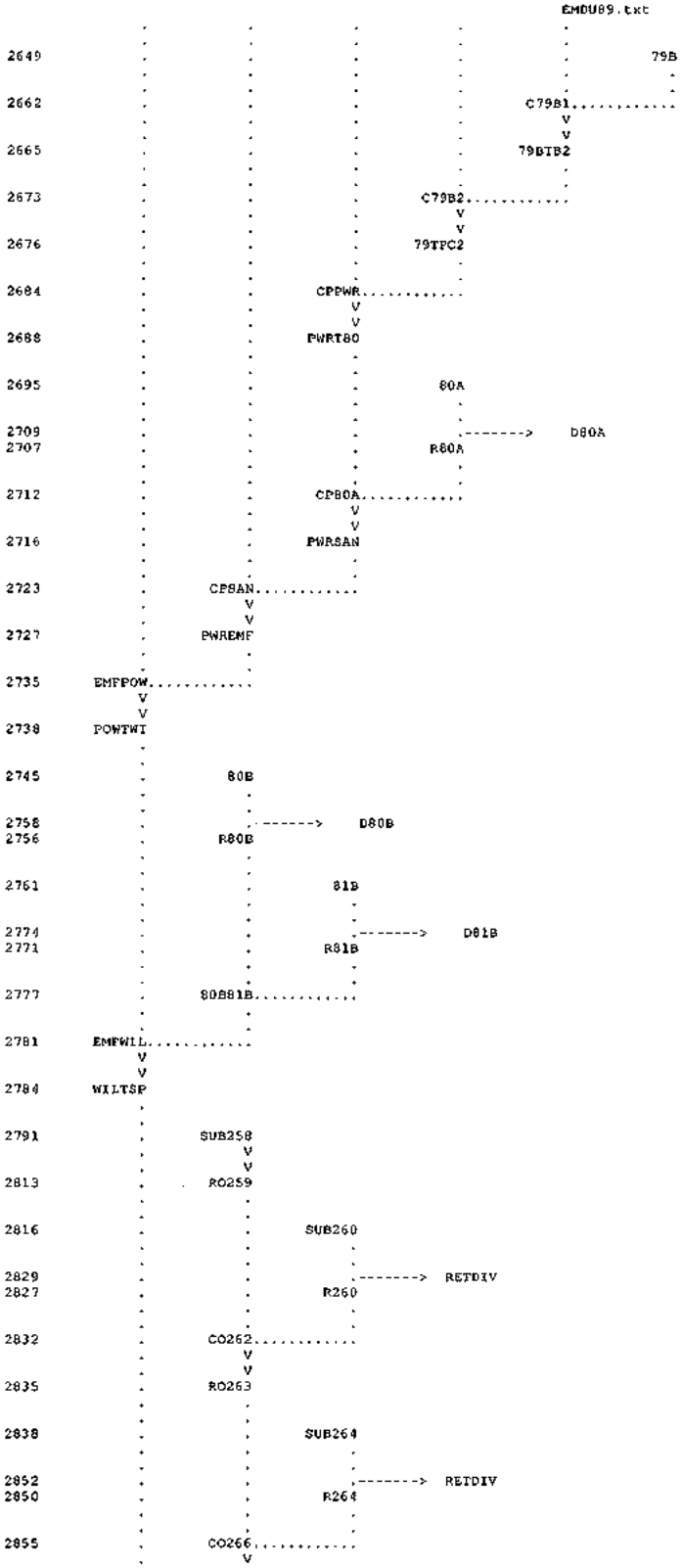
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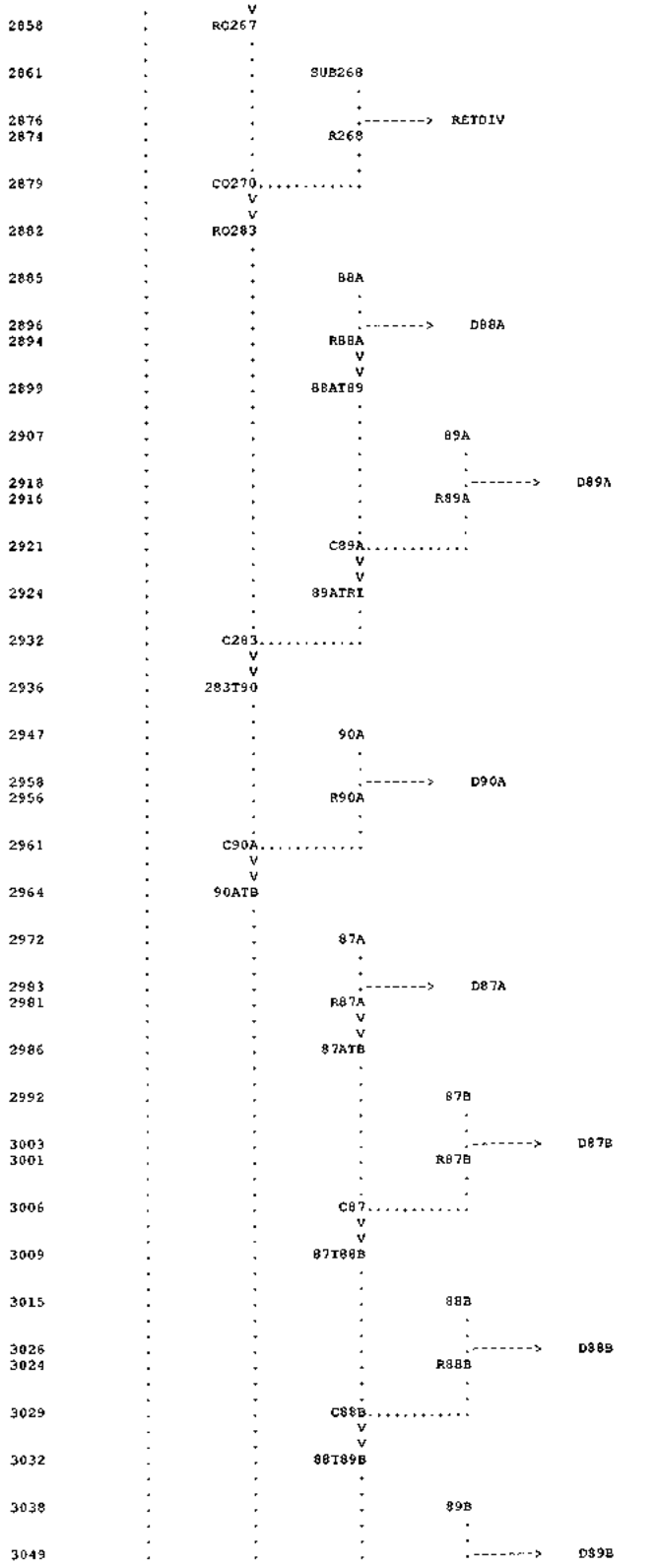
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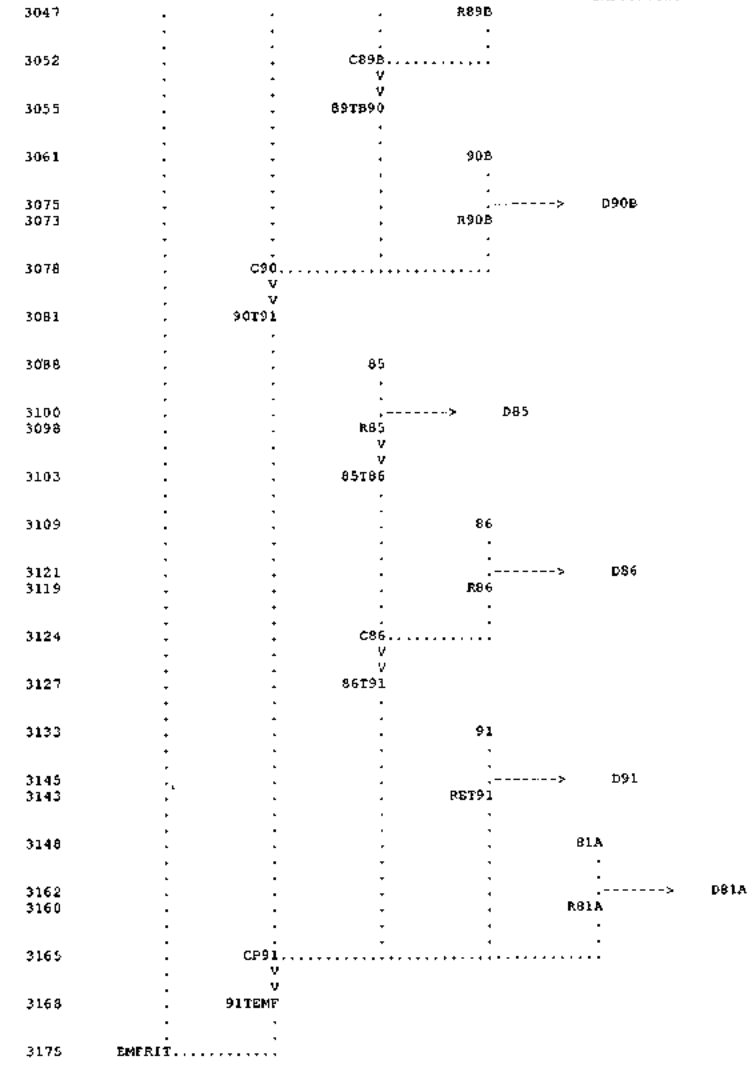

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*              JUN   1998               *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   23JAN13  TIME  12:53:14   *
*                                       *
*****************************************
```

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

FILE: EMDU89.DAT

MODEL REVISED: 1-22-2013

PROJECT: EASTMARK 646

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING FOR DEVELOPMENT UNITS 8&9 (DU 8&9).

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). ONSITE WATERSHEDS WERE UPDATED TO REFLECT CURRENT PLAN FOR DEVELOPMENT UNITS 8 & 9.

MODEL REVISED BY:

WOOD, PATEL & ASSOCIATES, INC.
DARREN E. SMITH, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2012\123835\PROJECT SUPPORT\REPORTS\
DRAINAGE\HYDROLOGY\PROPOSED\EMDU89.DAT

****

FILE: MPGDU7.DAT

MODEL REVISED: 09-07-2011

PROJECT: MESA PROVING GROUNDS

THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
BELOW. REFERENCING WS2-NEM.DSS IS STILL REQUIRED.

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING
FOR DEVELOPMENT UNIT 7 (DU7)PROVIDED BY ARIZONA LAND DESIGN ON 09/02/201
09/02/2011.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). ONSITE WATERSHEDS WERE
UPDATED TO REFLECT A GRADING PLAN PROVIDED BY LD TEAM ON 8/30/2011.
MODELING OF THE POWERLINE FLOODWAY HAS BEEN UPDATED TO REFLECT THE
EXISTING SECTIONS AND SLOPE PER AS-BUILT DRAWINGS ACROSS THE MPG
SITE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL W. MATTHEWS, E.I.T.

FILE PATH:
R:\MESA PROVING GROUNDS\2011\113697\PROJECT SUPPORT\REPORTS\
DRAINAGE\HYDROLOGY\MPGDU7.DAT

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FILE: MPG20RT2.DAT

MODEL REVISED: 04-25-2011

PROJECT: MESA PROVING GROUNDS

THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
BELOW. REFERENCING WS2-NEM.DSS IS STILL REQUIRED.

THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
BY SWABACK PARTNERS ON 12/12/07.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). ONSITE WATERSHEDS 01 AND
20 WERE UPDATED TO REFLECT THE INCORPORATION OF THE FIRST SOLAR SITE
IN THE NORTHEAST CORNER OF DU-6. WATERSHED 02 WAS SPLIT INTO 02A AND
02B. LAND USE WAS CHANGED TO INDUSTRIAL FOR 02B AND ENTIRELEY
RESIDENTIAL FOR 02A.
THE FIRST SOLAR SITE RUNOFF WILL NOW BE RETAINED ENTIRELY ONSITE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEPHEN M. SCINTO, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2010\103564.04\PROJECT SUPPORT\REPORTS\
DRAINAGE\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL\
MPG20RT2.DAT

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FILE: MPG20RT2.DAT

MODEL REVISED: 09-16-08

PROJECT: MESA PROVING GROUNDS

THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
BELOW. REFERENCING WS2-NEM.DSS IS STILL REQUIRED.

THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
BY SWABACK PARTNERS ON 12/12/07.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). ONSITE WATERSHEDS 01, 02,
03, AND 06 WERE UPDATED TO REFLECT THE CURRENT GOLF COURSE
CONFIGURATION.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL W. MATTHEWS, E.I.T.

FILE PATH:
R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND PLAN\2ND SUBMITTAL(COM)\HYDROLOGY\MPG20RT2.DAT

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FILE: MPG20RT2.DAT

MODEL REVISED: 05-15-08

PROJECT: MESA PROVING GROUNDS

MODEL REVISION DESCRIPTION:

THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE BELOW. REFERENCING WS2-NEM.DSS IS STILL REQUIRED.

THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED BY SWABACK PARTNERS ON 12/12/07.

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). WATERSHED 79A WAS UPDATED AS REQUESTED BY FLOOD CONTROL DISTRICT OF MARICOPA COUNTY TO REDUCE THE PERCENT IMPERVIOUS VALUE FROM 80% TO 0% TO MATCH THE LAND USE AS MODELED WITHIN THE EAST MESA ADMP.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL W. MATTHEWS, E.I.T.

FILE PATH:
R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND PLAN\2ND SUBMITTAL\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\ MPG20RT2.DAT

****

FILE: MPG20RT2.DAT

MODEL REVISED: 01-08-08

PROJECT: MESA PROVING GROUNDS

MODEL REVISION DESCRIPTION:

THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE BELOW. REFERENCING WS2-NEM.DSS IS STILL REQUIRED.

THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED BY SWABACK PARTNERS ON 12/12/07.

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). WATERSHEDS 68A, 68B, 70A, 70B, 71, 73B, 73C, 74B, 74C, 75, 77B, 77C, 78B, 78C, AND 79A HAVE ALL BEEN UPDATED TO REFLECT CURRENT WATERSHED DELINEATIONS, NEW DEVELOPMENT, CURRENT RETENTION, AND FLOOD ROUTING. BASIN 75 HAS BEEN UPDATED TO REFLECT PLANNED DEVELOPEMENT FOR THE MESA PROVING GROUNDS SITE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL W. MATTHEWS, E.I.T.

FILE PATH:
R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND PLAN\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\ MPG20RT2.DAT

****

ID Kirkham Michael:
Last Revised Date: 1/22/03
Filename: WS4-SEM.DAT

Comments Dated 1/22/03 (CJ)

This model should be used ONLY for the Rittenhouse and Chandler Heights Basin Design Project - Final Design Analyses.

This model is one of several models that represent the EMF watershed. This model covers the Southeast Mesa Area and should reference as a DSS the watershed model for the Northeast Mesa Area (Filename WS2-NEM.DAT).

This model is necessary to determine the input hydrographs for the Rittenhouse Basin Design HEC-RAS Unsteady State analysis. To develop the necessary input hydrographs the following models should be run in order. Because the files utilize a TAPE21 file to export import hydrographs between models, prior to running the FIRST model (WS1-NWM.DAT) any existing TAPE21 file in the directory should be deleted. The run procedure order is:

1) WS1-NWM.DAT

2) WS2-NEM.DAT
3) WS3-QCSW.DAT
4) WS4-SEM.DAT (referencing WS2-NEM.DSS for the DSS file)
5) RT1-BASE.DAT

The necessary input hydrographs for the Rittenhouse Basin analysis are determined in RT1-BASE. In that output file, the hydrograph at RWFLD1 should be exported and used as the input hydrograph at the EMF Reach 4 Cross Section 17.082. And the hydrograph at RITTEN should be exported and used as the input hydrograph for the Rittenhouse Main Channel at Cross Section B20.00

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**********************************************************************
**** NOTE BY PRIMATECH ENGINEERS:                                  ****
**** DATE: 06/12/2001                                              ****
**** THE NEW FILE NAME IS: SEBTALT2.DAT                            ****
**** THE FILE WAS RENAMED AS <<RTBTALT2.DAT>> FOR THE EAST MARICOPA ****
**** FLOODWAY CAPACITY MITIGATION PROJECT, BY FLOOD CONTROL DISTRICT OF ****
**** MARICOPA COUNTY.                                              ****
**** THE FILE WAS RENAMED <<RTBTALT3.DAT>> AND UPDATED USING GREEN AND  ****
**** AMPT FUTURE CONDITIONS FOR BASINS 258 TO 268.                 ****
**********************************************************************


 THIS MODEL WAS ORIGINALLY MIDDOUT.DAT
 IT HAS BEEN MODIFIED BY CPE (7/2000)
 FOR ALTERNATIVE 2 FOR THE EAST MARICOPA FLOODWAY
 CAPACITY MITIGATION AND MULTI-USE CORRIDOR STUDY
 TO ROUTE BOTH THE POWERLINE FLOODWAY
 AND THE SANTAN FREEWAY CHANNEL INTO THE RAY BASIN PRIOR THEIR OUTFALL
 INTO THE EMF

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

      Model files changed by Collins/Pina Engineering
      to reflect multi-use design concepts (recreation
      and environment) proposed throughout the entire
      EMF Corridor.    July 2000


 VERSION 8.06  CPE 7/31/00

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


**********************************************************************
 FILENAME: MIDDOUT.DAT

 ALL CIP INFRASTRUCTURE IS IN PLACE, FUTURE CONDITIONS LANDUSE IS IN PLACE
 FLOW IS ROUTED UP ELLSWORTH ROAD IN A EARTH LINED CHANNEL

**********************************************************************
 PRODUCED BY DIBBLE AND ASSOCIATES AND HOSKIN ENGINEERING CONSULTANTS.
 File Name: Final8.Dat
 Revised - Jan, 2000 by SZ (Wood/Patel) From Final7.dat - new Z-V & Sideweir
 Revised - Jan, 2000 by SZ (Wood/Patel) from Final6.dat - 60% review comments
 Revised - Dec, 1999 by SZ (Wood/Patel) from Final5.dat
 Revised - Dec, 1999 by SZ (Wood/Patel) from Final4.dat
 Revised - Nov, 1999 by SZ (Wood/Patel) from Final3.dat
 Revised - June 1999 by SZ (Wood/Patel) for Final Model from Opt1.dat.
 Revised - May 1999 by SZ (Wood/Patel) for Option 1, Based on Model SDIB.DAT
 REVISED - MAY, 1999 BY VAS TO INCORPORATE INCREASE OF SUBBASIN RETENTION AND
           REVISIONS TO THE REGIONAL DETENTION BASIN STORAGE
 REVISED - FEB, 1999 BY VALERIE SWICK, FCD OF MARICOPA COUNTY
 REVISED - MAY, 1998 BY D&A

 REVISED BY VALERIE SWICK, FEB. 26, 1998

 FLOWS FROM DETENTION BASIN LOCATED AT NE CORNER OF ELLIOT AND ELLSWORTH ROADS
 IS ROUTED TO THE SOUTHWEST BY SIPHON DRAW TO SUBBASIN 70A. FROM THERE THEY
 WILL BE ROUTED BY A CHANNEL TO THE EMF. FLOWS FROM SUBBASINS ADJACENT TO
 SANTAN FREEWAY ALIGNMENT WILL BE ROUTED SOUTH TO SUBBASIN 70A WHERE THEY WILL
 BE COMBINED WITH FLOW IN SIPHON DRAW.

 EAST MESA AREA DRAINAGE MASTER PLAN
 AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
 AUGUST 1997
 SOUTHEAST MESA HIGH RESOLUTION MODEL

 **********FUTURE CONDITION MODEL OF THE WATERSHED**********

 **********ATTENTION**********
  SUBBASINS 75, 79A, 79B, 78E,  LANDUSES WERE NOT
  CHANGED BECAUSE IT WAS FELT THAT THEIR FUTURE CONDITIONS LANDUSES WOULD BE
  SIMILAR TO THE EXISTING CONDITIONS LANDUSES.
  RETENTION VOLUMES WILL ALSO NOT BE UTILIZED FOR SUBBASINS 75, 79A, 79B, 78E
  SOME QUEEN CREEK SUBBASINS WILL ALSO NOT HAVE RETENTION VOLUMES, EITHER
  BECAUSE THEY LIE IN PINAL COUNTY AND WE DONT KNOW PINAL COUNTIES PLANS OR
  THEY LIE IN THE SANTAN MOUNTAINS AND WON'T GET DEVELOPED
  WILLIAMS GATEWAY AIRPORT (SUBBASINS 80A, 80B, 81A, AND 81B) ARE MODELED AS
  FUTURE CONDITIONS AND HAVE RETENTION VOLUMES FOR THE 100YR 2HR STORM
**********************************************************************
 FILENAME:  SDIBB.DAT

 THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
 TOTAL DRAINAGE AREA IS APPROXIMATELY 213 SQ. MI.
 THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
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                    CONDITIONS.

                    100-YEAR 24-HOUR FREQUENCY
                    AREAL REDUCTIONS FROM FCD HYDROLOGY MANUAL
                    THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
                    AND EAST OF THE CAP

                    DATA FROM THE QUEEN CREEK ADMS HAS BEEN ADDED TO CALCULATE FLOWS INTO THE
                    EMF.   MUSKINGUM ROUTING NSTEPS WERE ADJUSTED TO BE WITHIN THE SUGGESTED
                    RANGE.

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

                    ORIGINAL STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
                    DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
                    AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
                    HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
                    DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

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

                    VELOCITIES FOR ADMP IMPROVEMENT CHANNELS FROM DIBBLE AND ASSOCIATES
                    SUGGESTED ALTERNATIVES (JULY 1, 1997)

                    ***************************************************************************
                    **** THE FOLLOWING NOTE WAS ADDED BY PRIMATECH ENGINEERS ON 06-12-2001 ****
                    ***************************************************************************
                    NOTE: MUST USE NEBUILD.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
                          SUPERSTITION FREEWAY.
                    ***************************************************************************


                    NOTE: MUST USE NDIBF.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
                          SUPERSTITION FREEWAY.

                    DDM MCUHP2 SE MESA ADMP - SOUTH OF SUPERSTITION FWY, FUTURE CONDITIONS

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          5  MINUTES IN COMPUTATION INTERVAL
                      IDATE     1APR97  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        600  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     3APR97  ENDING DATE
                     NDTIME       0155  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                        TOTAL TIME BASE   49.92 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

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

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

0 PI PRECIPITATION PATTERN

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376 JD INDEX STORM NO. 3
STRM 3.49 PRECIPITATION DEPTH
TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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377 JD INDEX STORM NO. 4
STRM 3.38 PRECIPITATION DEPTH
TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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378 JD INDEX STORM NO. 5
STRM 3.24 PRECIPITATION DEPTH
TRDA 30.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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

379 JD INDEX STORM NO. 6
STRM 3.10 PRECIPITATION DEPTH
TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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

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

0 PI PRECIPITATION PATTERN

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

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

381 JD INDEX STORM NO. 8

STRM 3.00 PRECIPITATION DEPTH

TRDA 120.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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

382 JD INDEX STORM NO. 9

STRM 2.97 PRECIPITATION DEPTH

TRDA 150.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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

-----DSS---ZOPEN: Existing File Opened, File: WS2-NEM.DSS
Unit: 71; DSS Version: 6-JG
----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
Time Window set. Interval: 5 Number of data values: 1
Starting date and time: Mar 31, 1997 2400 (35519 1440)
Ending date and time: Mar 31, 1997 2400 (35519 1440)
Input time offset: 0
After ZRDINF, Record found: T

```
       Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
       Offset:       0,  Units: CFS      ,  Type:INST-VAL
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW//5MIN/100YR/
       Time Window set.  Interval:     5  Number of data values:    601
       Starting date and time:  Mar 31, 1997  2400  ( 35519 1440)
       Ending   date and time:  Apr 3, 1997  0200  ( 35522  120)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
       After ZRDINF, Record found: T
       Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    2   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35520
       JULS: 31MAR97       JULSD: 01APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
       After ZRDINF, Record found: T
       Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  290   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35521
       JULS: 31MAR97       JULSD: 02APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
       After ZRDINF, Record found: T
       Pathname: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  578   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35522
       JULS: 31MAR97       JULSD: 03APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   24  ILIM:  601
      ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
       Offset:       0,  Units: CFS      ,  Type:INST-VAL


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

           **************
           *            *
465 KK     *    EMFGUA  *
           *            *
           **************

467 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        600  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .083  TIME INTERVAL IN HOURS



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

           **************
           *            *
486 KK     *       R64  *
           *            *
           **************

491 KO          OUTPUT CONTROL VARIABLES
```

```
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        600  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS


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


           ***************
           *             *
 755 KK    *    CPKNOX   *
           *             *
           ***************

 756 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        600  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS


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


           ***************
           *             *
 830 KK    *      KNOX   *
           *             *
           ***************

 832 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                     IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2        600  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS

       ----- Entering ZRRTSX for unit 71 -----
Pathname: /CAP1A/OVERCHUTE/FLOW//5MIN/100YEAR/
       Time Window set.  Interval:     5  Number of data values:      1
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /CAP1A/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /CAP1A/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: T,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
      ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
       Offset:       0,  Units: CFS      ,  Type:INST-VAL
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /CAP1A/OVERCHUTE/FLOW//5MIN/100YEAR/
       Time Window set.  Interval:     5  Number of data values:    601
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Apr 3, 1997  0200  (  35522  120)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /CAP1A/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /CAP1A/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
       After ZRDINF, Record found: T
       Pathname: /CAP1A/OVERCHUTE/FLOW/01APR1997/5MIN/100YEAR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /CAP1A/OVERCHUTE/FLOW/01APR1997/5MIN/100YEAR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    2   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35520
       JULS: 31MAR97       JULSD: 01APR97
       Quality Read: F,  Quality Requested: F
```

```
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
       After ZRDINF, Record found: T
       Pathname: /CAP1A/OVERCHUTE/FLOW/02APR1997/5MIN/100YEAR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /CAP1A/OVERCHUTE/FLOW/02APR1997/5MIN/100YEAR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  290   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35521
       JULS: 31MAR97        JULSD: 02APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
       After ZRDINF, Record found: T
       Pathname: /CAP1A/OVERCHUTE/FLOW/03APR1997/5MIN/100YEAR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   50:  /CAP1A/OVERCHUTE/FLOW/03APR1997/5MIN/100YEAR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  578   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35522
       JULS: 31MAR97        JULSD: 03APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   24  ILIM:  601
     ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
       Offset:        0,  Units: CFS      ,  Type:INST-VAL
-----DSS---ZWRITE Unit  71; Vers.  155:  /CAP1B/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  155:  /CAP1B/OVERCHUTE/FLOW/01APR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  155:  /CAP1B/OVERCHUTE/FLOW/02APR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  155:  /CAP1B/OVERCHUTE/FLOW/03APR1997/5MIN/100YEAR/
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
       Time Window set.  Interval:     5  Number of data values:      1
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97        JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
     ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
       Offset:        0,  Units: CFS      ,  Type:INST-VAL
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
       Time Window set.  Interval:     5  Number of data values:    601
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Apr 3, 1997  0200  (  35522  120)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97        JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
       After ZRDINF, Record found: T
       Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    2   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35520
       JULS: 31MAR97        JULSD: 01APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
       After ZRDINF, Record found: T
       Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  290   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35521
       JULS: 31MAR97        JULSD: 02APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
       After ZRDINF, Record found: T
       Pathname: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  578   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35522
       JULS: 31MAR97        JULSD: 03APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   24  ILIM:  601
     ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
```

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       Offset:       0,  Units: CFS      ,  Type:INST-VAL
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
       Time Window set.  Interval:      5  Number of data values:      1
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Mar 31, 1997  2400  (  35519 1440)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:    1    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
     ----- Exiting ZRRTS, Number of data values:      1,  Status:  0
       Offset:       0,  Units: CFS      ,  Type:INST-VAL
       ----- Entering ZRRTSX for unit 71 -----
Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW//5MIN/100YR/
       Time Window set.  Interval:      5  Number of data values:    601
       Starting date and time:  Mar 31, 1997  2400  (  35519 1440)
       Ending   date and time:  Apr 3, 1997  0200  (  35522  120)
       Input time offset:      0
       After ZRDINF, Record found: T
       Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35519
       JULS: 31MAR97       JULSD: 31MAR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:  288  NDATA:  288  NREAD:    1  ILIM:    1
       After ZRDINF, Record found: T
       Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    2   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35520
       JULS: 31MAR97       JULSD: 01APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  289
       After ZRDINF, Record found: T
       Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  290   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35521
       JULS: 31MAR97       JULSD: 02APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:  288  ILIM:  577
       After ZRDINF, Record found: T
       Pathname: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
       Number of actual data:  288  Header length:   0
       Compression:   0  Quality:   0
-----DSS--- ZREAD Unit  71; Vers.   25:  /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
     ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:  578   NVALS:  601    JULS:   35519  ISTIME:  1440
       NLDATA:  288   JULSD:   35522
       JULS: 31MAR97       JULSD: 03APR97
       Quality Read: F,  Quality Requested: F
       ---ZRRTSB Calculations:  NPOS:    1  NDATA:  288  NREAD:   24  ILIM:  601
     ----- Exiting ZRRTS, Number of data values:    601,  Status:  0
       Offset:       0,  Units: CFS      ,  Type:INST-VAL
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

WARNING --- ROUTED OUTFLOW (    316.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    342.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    359.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    369.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    371.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    367.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    359.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    347.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    332.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    317.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    302.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    306.) IS GREATER THAN MAXIMUM OUTFLOW (    298.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (327.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (340.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (345.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (344.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (338.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (328.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (316.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (302.) IS GREATER THAN MAXIMUM OUTFLOW (298.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (771.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (797.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (816.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (826.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (830.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (828.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (823.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (815.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (807.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (798.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (788.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (775.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (768.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (781.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (788.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (789.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (786.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (781.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (775.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (769.) IS GREATER THAN MAXIMUM OUTFLOW (766.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (684.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (722.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (757.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (786.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (808.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (822.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (829.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (829.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (825.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (819.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (810.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (802.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (792.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (781.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (767.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (750.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (731.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (709.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (687.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (665.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (675.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (708.) IS GREATER THAN MAXIMUM OUTFLOW (654.) IN STORAGE-OUTFLOW TABLE

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WARNING --- ROUTED OUTFLOW (    737.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    760.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    776.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    785.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    789.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    787.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    783.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    778.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    771.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    764.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    755.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    743.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    728.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    710.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    691.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    671.) IS GREATER THAN MAXIMUM OUTFLOW (     654.) IN STORAGE-OUTFLOW TABLE


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            **************
            *            *
2771 KK     *     R81B   *
            *            *
            **************

2773 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2        600  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .083  TIME INTERVAL IN HOURS

     DT          DIVERSION
                      ISTAD       D81B  DIVERSION HYDROGRAPH IDENTIFICATION
                     DSTRMX      35.00  MAXIMUM VOLUME TO BE DIVERTED

     DI             INFLOW         .00  10000.00

     DQ        DIVERTED FLOW       .00  10000.00
                                                              ***

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

                    DIVERSION HYDROGRAPH     D81B
                   TRANSPOSITION AREA        .0 SQ MI

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                   6-HR          24-HR         72-HR       49.92-HR
+   (CFS)       (HR)
                            (CFS)
+      419.    11.92                 55.           18.           8.            8.
                          (INCHES)  .605         .781         .781          .781
                           (AC-FT)   27.           35.          35.           35.

                        CUMULATIVE AREA =     .84 SQ MI


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

                    HYDROGRAPH AT STATION      R81B
                   TRANSPOSITION AREA        .0 SQ MI

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                   6-HR          24-HR         72-HR       49.92-HR
+   (CFS)       (HR)
                            (CFS)
+     1223.    12.25                155.           44.          21.           21.
                          (INCHES) 1.713        1.927        1.927         1.927
                           (AC-FT)   77.           86.          86.           86.

                        CUMULATIVE AREA =     .84 SQ MI


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DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 1.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 445.	11.92	55.	18.	8.	8.
		(INCHES) .606	.781	.781	.781
		(AC-FT) 27.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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

HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 1.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 1215.	12.25	153.	43.	21.	21.
		(INCHES) 1.698	1.911	1.911	1.911
		(AC-FT) 76.	86.	86.	86.

CUMULATIVE AREA = .84 SQ MI

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

DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 5.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 477.	11.92	55.	18.	8.	8.
		(INCHES) .607	.781	.781	.781
		(AC-FT) 27.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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

HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 5.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 1180.	12.25	148.	42.	20.	20.
		(INCHES) 1.634	1.838	1.838	1.838
		(AC-FT) 73.	82.	82.	82.

CUMULATIVE AREA = .84 SQ MI

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

DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 458.	11.92	55.	18.	8.	8.
		(INCHES) .613	.781	.781	.781
		(AC-FT) 27.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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

HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 1138.	12.25	140.	39.	19.	19.
		(INCHES) 1.551	1.748	1.748	1.748
		(AC-FT) 69.	78.	78.	78.

CUMULATIVE AREA = .84 SQ MI

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

DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 30.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 467.	12.00		56.	18.	8.	8.
		(INCHES)	.620	.781	.781	.781
		(AC-FT)	28.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 30.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1083.	12.25		131.	37.	18.	18.
		(INCHES)	1.445	1.634	1.634	1.634
		(AC-FT)	65.	73.	73.	73.

CUMULATIVE AREA = .84 SQ MI

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

DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 60.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 591.	12.00		56.	18.	8.	8.
		(INCHES)	.624	.781	.781	.781
		(AC-FT)	28.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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

HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 60.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1029.	12.25		121.	34.	17.	17.
		(INCHES)	1.342	1.520	1.520	1.520
		(AC-FT)	60.	68.	68.	68.

CUMULATIVE AREA = .84 SQ MI

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DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 90.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 579.	12.00		57.	18.	8.	8.
		(INCHES)	.627	.781	.781	.781
		(AC-FT)	28.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 90.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1009.	12.25		118.	33.	16.	16.
		(INCHES)	1.305	1.479	1.479	1.479
		(AC-FT)	58.	66.	66.	66.

CUMULATIVE AREA = .84 SQ MI

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DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 120.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					

		(CFS)				
+ 566.	12.00		57.	18.	8.	8.
		(INCHES)	.629	.781	.781	.781
		(AC-FT)	28.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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

HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 120.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 990.	12.25		114.	32.	16.	16.
		(INCHES)	1.267	1.438	1.438	1.438
		(AC-FT)	57.	64.	64.	64.

CUMULATIVE AREA = .84 SQ MI

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DIVERSION HYDROGRAPH D81B
TRANSPOSITION AREA 150.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 559.	12.00		57.	18.	8.	8.
		(INCHES)	.631	.781	.781	.781
		(AC-FT)	28.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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HYDROGRAPH AT STATION R81B
TRANSPOSITION AREA 150.0 SQ MI

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 978.	12.25		112.	32.	15.	15.
		(INCHES)	1.244	1.414	1.414	1.414
		(AC-FT)	56.	63.	63.	63.

CUMULATIVE AREA = .84 SQ MI

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INTERPOLATED DIVERSION HYDROGRAPH AT D81B

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 444.	11.92		55.	18.	8.	8.
		(INCHES)	.606	.781	.781	.781
		(AC-FT)	27.	35.	35.	35.

CUMULATIVE AREA = .84 SQ MI

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INTERPOLATED HYDROGRAPH AT R81B

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	49.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1215.	12.25		153.	43.	21.	21.
		(INCHES)	1.698	1.911	1.911	1.911
		(AC-FT)	76.	86.	86.	86.

CUMULATIVE AREA = .84 SQ MI

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2777 KK   *   80B81B   *
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2779 KO          OUTPUT CONTROL VARIABLES
                          IPRNT         5  PRINT CONTROL
                          IPLOT         0  PLOT CONTROL
                          QSCAL        0.  HYDROGRAPH PLOT SCALE
                          IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                           IOUT        21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2       600  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT      .083  TIME INTERVAL IN HOURS

***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
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      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0267.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH    R0283.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).


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3168 KK    *    91TEMF   *
           *             *
           ***************

3170 KO          OUTPUT CONTROL VARIABLES
                          IPRNT         5  PRINT CONTROL
                          IPLOT         0  PLOT CONTROL
                          QSCAL        0.  HYDROGRAPH PLOT SCALE
                          IPNCH         0  PUNCH COMPUTED HYDROGRAPH
                           IOUT        21  SAVE HYDROGRAPH ON THIS UNIT
                          ISAV1         1  FIRST ORDINATE PUNCHED OR SAVED
                          ISAV2       600  LAST ORDINATE PUNCHED OR SAVED
                         TIMINT      .083  TIME INTERVAL IN HOURS

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SOSS	1649.	12.67	579.	204.	107.	12.50		
+	ROUTED TO	RSOSS	1626.	12.75	577.	204.	107.	12.50		
+	HYDROGRAPH AT	59A	302.	12.33	41.	13.	6.	.26		
+	DIVERSION TO	D59A	4.	8.42	3.	1.	0.	.26		
+	HYDROGRAPH AT	R59A	302.	12.33	41.	12.	6.	.26		
+	2 COMBINED AT	C59A	1744.	12.67	611.	215.	112.	12.76		
+	ROUTED TO	59A59B	1708.	12.83	606.	215.	112.	12.76		
	HYDROGRAPH AT									

+	59B	637.	12.83	132.	39.	19.	.94
+ DIVERSION TO	D59B	637.	12.83	119.	32.	15.	.94
+ HYDROGRAPH AT	R59B	137.	13.67	24.	8.	4.	.94
+ 2 COMBINED AT	C59B	1708.	12.83	615.	219.	114.	13.70
+ ROUTED TO	59BT60	1616.	13.33	613.	219.	113.	13.70
+ HYDROGRAPH AT	60	1069.	13.50	359.	112.	54.	2.30
+ DIVERSION TO	D60	1069.	13.50	313.	86.	41.	2.30
+ HYDROGRAPH AT	R60	355.	14.67	86.	27.	13.	2.30
+ 2 COMBINED AT	EMFGUA	1616.	13.33	658.	238.	123.	16.00
+ ROUTED TO	GUATEL	1524.	13.58	629.	236.	121.	16.00
+ HYDROGRAPH AT	64	924.	12.42	156.	51.	25.	.81
+ DIVERSION TO	D64	924.	12.42	121.	34.	16.	.81
+ HYDROGRAPH AT	R64	477.	12.75	57.	18.	8.	.81
+ 2 COMBINED AT	EMPELL	1595.	13.58	668.	249.	127.	16.81
+ ROUTED TO	ELTWAR	1491.	14.00	646.	249.	127.	16.81
+ HYDROGRAPH AT	62A	806.	12.00	89.	31.	15.	.38
+ DIVERSION TO	D62A	806.	12.00	57.	17.	8.	.38
+ HYDROGRAPH AT	R62A	554.	12.08	46.	14.	7.	.38
+ ROUTED TO	62ATB	448.	12.17	46.	14.	7.	.38
+ HYDROGRAPH AT	62B	544.	12.00	54.	19.	9.	.23
+ DIVERSION TO	D62B	454.	11.92	33.	10.	5.	.23
+ HYDROGRAPH AT	R62B	470.	12.08	30.	9.	4.	.23
+ 2 COMBINED AT	C62B	659.	12.17	76.	23.	11.	.61
+ ROUTED TO	62BTD	394.	12.58	72.	23.	11.	.61
+ HYDROGRAPH AT	62D	609.	12.17	86.	28.	13.	.46
+ DIVERSION TO	D62D	609.	12.17	63.	18.	8.	.46
+ HYDROGRAPH AT	R62D	275.	12.50	34.	10.	5.	.46
+ 2 COMBINED AT	CP62D	646.	12.50	106.	33.	16.	1.07
+ ROUTED TO	62DTF	445.	13.25	105.	33.	16.	1.07
+ HYDROGRAPH AT	62F	421.	12.17	49.	16.	8.	.26
+ DIVERSION TO	D62F	421.	12.17	32.	9.	4.	.26
+ HYDROGRAPH AT	R62F	365.	12.25	24.	7.	3.	.26
+ 2 COMBINED AT	CP62F	461.	13.25	126.	40.	19.	1.33
ROUTED TO							

+	62T63	415.	13.58	123.	40.	19.	1.33
+ HYDROGRAPH AT	63	1190.	12.33	177.	58.	28.	.91
+ DIVERSION TO	D63	1190.	12.33	128.	36.	17.	.91
+ HYDROGRAPH AT	R63	787.	12.50	74.	22.	11.	.91
+ 2 COMBINED AT	CP63	720.	12.50	190.	61.	29.	2.24
+ ROUTED TO	63T71	354.	15.33	172.	61.	29.	2.24
+ HYDROGRAPH AT	68B1	295.	12.08	35.	12.	6.	.15
+ HYDROGRAPH AT	68B2	129.	12.08	14.	5.	2.	.06
+ HYDROGRAPH AT	68B3	85.	12.00	9.	3.	1.	.04
+ 3 COMBINED AT	CP68	496.	12.08	58.	20.	10.	.24
+ DIVERSION TO	D68B	496.	12.08	42.	12.	6.	.24
+ HYDROGRAPH AT	R68	237.	12.25	25.	8.	4.	.24
+ ROUTED TO	68BT69	118.	12.58	24.	8.	4.	.24
+ HYDROGRAPH AT	69	208.	12.00	22.	7.	4.	.09
+ DIVERSION TO	D69	208.	12.00	16.	5.	2.	.09
+ HYDROGRAPH AT	R69	106.	12.17	9.	3.	1.	.09
+ 2 COMBINED AT	C69	136.	12.58	33.	11.	5.	.33
+ ROUTED TO	69T71	76.	14.00	30.	11.	5.	.33
+ HYDROGRAPH AT	25	351.	12.17	50.	17.	8.	.21
+ DIVERSION TO	25RET	351.	12.17	39.	11.	5.	.21
+ HYDROGRAPH AT	RET25	138.	12.42	19.	6.	3.	.21
+ ROUTED TO	25T71	53.	13.92	19.	6.	3.	.21
+ HYDROGRAPH AT	71	1963.	12.17	258.	89.	43.	.86
+ DIVERSION TO	D71	1647.	12.08	143.	42.	20.	.86
+ HYDROGRAPH AT	R71	1963.	12.17	158.	46.	22.	.86
+ 4 COMBINED AT	C71	1889.	12.17	332.	120.	58.	3.64
+ ROUTED TO	71T72	869.	12.83	328.	120.	58.	3.64
+ HYDROGRAPH AT	72	1422.	12.17	202.	69.	33.	.84
+ DIVERSION TO	D72	1422.	12.17	146.	42.	20.	.84
+ HYDROGRAPH AT	R72	755.	12.42	89.	28.	13.	.84
+ 2 COMBINED AT	CPKNOX	1514.	12.42	407.	144.	69.	4.48
+ 2 COMBINED AT	EMFWAR	1690.	14.00	911.	369.	184.	21.29
+ ROUTED TO	WARTKN	1657.	14.17	898.	368.	184.	21.29
HYDROGRAPH AT							

+	26	98.	12.00	11.	4.	2.	.05
+ DIVERSION TO	26RET	98.	12.00	9.	2.	1.	.05
+ HYDROGRAPH AT	RET26	31.	12.25	4.	1.	1.	.05
+ ROUTED TO	26T70B	13.	12.75	4.	1.	1.	.05
+ HYDROGRAPH AT	70B	647.	12.17	92.	31.	15.	.34
+ DIVERSION TO	D70B	647.	12.17	58.	17.	8.	.34
+ HYDROGRAPH AT	R70B	512.	12.33	48.	14.	7.	.34
+ 2 COMBINED AT	CP70B	512.	12.33	52.	15.	7.	.38
+ ROUTED TO	70BT76	160.	13.75	51.	15.	7.	.38
+ HYDROGRAPH AT	76B	1157.	12.17	158.	53.	26.	.64
+ DIVERSION TO	D76B	1157.	12.17	117.	33.	16.	.64
+ HYDROGRAPH AT	R76B	539.	12.42	66.	20.	10.	.64
+ 2 COMBINED AT	KNOX	539.	12.42	116.	36.	17.	1.02
+ 2 COMBINED AT	EMFKNX	1800.	14.17	975.	395.	197.	22.31
+ ROUTED TO	KNXTRY	1744.	14.33	962.	395.	196.	22.31
+ HYDROGRAPH AT	65A	2593.	12.50	507.	168.	81.	2.54
+ DIVERSION TO	D65A	2593.	12.50	306.	88.	42.	2.54
+ HYDROGRAPH AT	R65A	2261.	12.67	275.	80.	39.	2.54
+ HYDROGRAPH AT	CAP1A	629.	12.83	106.	31.	15.	6.40
+ ROUTED TO	RCAP1A	517.	13.08	104.	31.	15.	6.40
+ ROUTED TO	RRCP1A	511.	13.17	103.	31.	15.	6.40
+ HYDROGRAPH AT	CAP1B	511.	13.17	103.	31.	15.	6.40
+ ROUTED TO	RCAP1B	474.	13.25	102.	31.	15.	6.40
+ 3 COMBINED AT	C65A1	2252.	12.75	440.	132.	63.	15.34
+ ROUTED TO	65ATB1	2052.	12.92	437.	132.	63.	15.34
+ DIVERSION TO	DB65A	1618.	12.92	196.	49.	24.	15.34
+ HYDROGRAPH AT	DIDB65	434.	12.75	241.	82.	40.	15.34
+ ROUTED TO	65B1T2	467.	12.75	240.	82.	40.	15.34
+ HYDROGRAPH AT	DIB65P	1618.	12.92	196.	49.	24.	15.34
+ ROUTED TO	DB65A	74.	14.00	70.	46.	23.	15.34
+ 2 COMBINED AT	C65A2	508.	14.00	307.	128.	62.	15.34
+ ROUTED TO	65AT-1	508.	14.00	307.	128.	62.	15.34
+ ROUTED TO	65AT-2	499.	14.42	294.	127.	62.	15.34
HYDROGRAPH AT							

+	65AW	555.	12.25	70.	21.	10.	.43
+ DIVERSION TO	D65AW	555.	12.25	58.	16.	8.	.43
+ HYDROGRAPH AT	R65AW	187.	12.58	19.	6.	3.	.43
+ ROUTED TO	65AI65	58.	13.67	17.	6.	3.	.43
+ HYDROGRAPH AT	65B	1552.	12.42	271.	88.	42.	1.37
+ DIVERSION TO	D65B	1552.	12.42	218.	60.	29.	1.37
+ HYDROGRAPH AT	R65B	669.	12.83	89.	28.	13.	1.37
+ 2 COMBINED AT	CP65B	607.	12.83	102.	33.	16.	1.80
+ DIVERSION TO	DIRS65	577.	12.83	73.	18.	9.	1.80
+ HYDROGRAPH AT	DI65B	30.	12.83	30.	14.	7.	1.80
+ 2 COMBINED AT	CP65A	529.	14.42	323.	140.	68.	17.14
+ ROUTED TO	65AI-3	529.	14.42	323.	140.	68.	17.14
+ HYDROGRAPH AT	DR65B	577.	12.83	73.	18.	9.	1.80
+ ROUTED TO	RS65A	11.	17.92	11.	10.	7.	1.80
+ 2 COMBINED AT	CP65	537.	14.42	332.	148.	73.	17.14
+ ROUTED TO	65I66	537.	14.42	332.	148.	73.	17.14
+ ROUTED TO	65I66A	537.	14.42	332.	148.	73.	17.14
+ ROUTED TO	65I66B	537.	14.42	332.	148.	73.	17.14
+ HYDROGRAPH AT	ADDI-E	246.	14.42	175.	64.	31.	.01
+ ROUTED TO	AEI67A	245.	14.67	174.	64.	31.	.01
+ HYDROGRAPH AT	67A	387.	12.25	52.	17.	8.	.30
+ DIVERSION TO	D67A	387.	12.25	38.	11.	5.	.30
+ HYDROGRAPH AT	R67A	229.	12.50	20.	6.	3.	.30
+ 2 COMBINED AT	C67A	255.	14.67	185.	70.	34.	.31
+ ROUTED TO	67ATC	253.	15.08	183.	70.	34.	.31
+ HYDROGRAPH AT	SUP2	422.	13.00	381.	215.	104.	.01
+ ROUTED TO	RSUP2	395.	16.25	379.	215.	104.	.01
+ HYDROGRAPH AT	67B	714.	12.25	105.	35.	17.	.53
+ DIVERSION TO	D67B	714.	12.25	73.	21.	10.	.53
+ HYDROGRAPH AT	R67B	457.	12.50	46.	14.	7.	.53
+ 2 COMBINED AT	C67B	494.	12.50	396.	229.	111.	.54
+ ROUTED TO	67BIC	412.	16.33	396.	229.	111.	.54
+ HYDROGRAPH AT	67C	1019.	12.42	146.	44.	21.	.93
DIVERSION TO							

+	D67C	1019.	12.42	126.	34.	16.	.93
+ HYDROGRAPH AT	R67C	295.	12.83	34.	11.	5.	.93
+ 3 COMBINED AT	C67C	669.	15.25	595.	307.	149.	1.78
+ ROUTED TO	67CT67	669.	15.33	595.	307.	149.	1.78
+ HYDROGRAPH AT	67D	183.	12.17	20.	6.	3.	.13
+ DIVERSION TO	D67D	183.	12.17	17.	5.	2.	.13
+ HYDROGRAPH AT	R67D	52.	12.50	5.	1.	1.	.13
+ 2 COMBINED AT	C67D	671.	15.33	597.	309.	150.	1.91
+ ROUTED TO	67DT66	671.	15.42	596.	309.	150.	1.91
+ HYDROGRAPH AT	66A	446.	12.17	46.	14.	7.	.26
+ DIVERSION TO	D66A	446.	12.17	39.	11.	5.	.26
+ HYDROGRAPH AT	R66A	105.	12.42	11.	3.	2.	.26
+ ROUTED TO	66ATB	39.	13.17	10.	3.	2.	.26
+ HYDROGRAPH AT	66B	605.	12.58	104.	32.	15.	.67
+ DIVERSION TO	D66B	605.	12.58	90.	24.	12.	.67
+ HYDROGRAPH AT	R66B	168.	13.08	24.	7.	4.	.67
+ 2 COMBINED AT	CP66B	198.	13.08	34.	11.	5.	.93
+ ROUTED TO	66BTC	150.	13.42	33.	11.	5.	.93
+ HYDROGRAPH AT	66C	707.	12.25	94.	30.	14.	.50
+ DIVERSION TO	D66C	707.	12.25	77.	21.	10.	.50
+ HYDROGRAPH AT	R66C	257.	12.58	29.	9.	4.	.50
+ 2 COMBINED AT	CP66C1	232.	12.58	58.	19.	9.	1.43
+ 2 COMBINED AT	CP66C2	712.	15.08	633.	326.	158.	3.34
+ DIVERSION TO	DB66	302.	15.08	230.	70.	34.	3.34
+ HYDROGRAPH AT	DI66	410.	15.08	403.	255.	124.	3.34
+ ROUTED TO	66C1T2	410.	15.08	403.	255.	124.	3.34
+ 2 COMBINED AT	CP66C	942.	14.42	730.	393.	193.	20.48
+ ROUTED TO	66CTD	942.	14.42	730.	393.	193.	20.48
+ HYDROGRAPH AT	DR66	302.	15.08	230.	70.	34.	3.34
+ ROUTED TO	RS66D1	194.	17.92	145.	56.	31.	3.34
+ DIVERSION TO	D-WB	171.	17.92	124.	37.	18.	3.34
+ HYDROGRAPH AT	B-WA	22.	17.92	22.	19.	13.	3.34
+ 2 COMBINED AT	C-WA	956.	14.50	747.	408.	205.	23.82
ROUTED TO							

+		RC-WA	956.	14.50	747.	408.	205.	23.82
+	HYDROGRAPH AT	DR-WA	171.	17.92	124.	37.	18.	3.34
+	ROUTED TO	RS66D2	29.	23.08	27.	24.	15.	3.34
+	2 COMBINED AT	CP66D	956.	14.50	754.	427.	219.	23.82
+	ROUTED TO	66T66D	956.	14.50	754.	427.	219.	23.82
+	ROUTED TO	66-66D	955.	14.50	754.	427.	219.	23.82
+	HYDROGRAPH AT	66D	651.	12.08	75.	26.	12.	.31
+	DIVERSION TO	D66D	651.	12.08	55.	16.	8.	.31
+	HYDROGRAPH AT	R66D	350.	12.25	32.	10.	5.	.31
+	HYDROGRAPH AT	61A	794.	12.17	95.	31.	15.	.52
+	DIVERSION TO	D61A	794.	12.17	76.	21.	10.	.52
+	HYDROGRAPH AT	R61A	333.	12.42	33.	10.	5.	.52
+	ROUTED TO	61ATB	122.	13.25	31.	10.	5.	.52
+	HYDROGRAPH AT	61B	1175.	12.42	176.	55.	26.	1.09
+	DIVERSION TO	D61B	1175.	12.42	151.	41.	20.	1.09
+	HYDROGRAPH AT	R61B	339.	12.83	45.	14.	7.	1.09
+	2 COMBINED AT	CP61B	312.	12.92	73.	23.	11.	1.61
+	ROUTED TO	61T66D	238.	13.67	71.	23.	11.	1.61
+	HYDROGRAPH AT	67E	771.	12.25	111.	36.	17.	.58
+	DIVERSION TO	D67E	771.	12.25	91.	25.	12.	.58
+	HYDROGRAPH AT	R67E	268.	12.67	34.	11.	5.	.58
+	2 COMBINED AT	C67E	267.	13.67	98.	33.	16.	2.19
+	3 COMBINED AT	C66D	1078.	14.42	821.	455.	232.	26.32
+	ROUTED TO	66T23A	1078.	14.42	821.	455.	232.	26.32
+	ROUTED TO	66T23B	1077.	14.50	821.	454.	232.	26.32
+	ROUTED TO	CULVT	1076.	14.50	821.	454.	232.	26.32
+	ROUTED TO	66T23C	1076.	14.50	820.	454.	232.	26.32
+	HYDROGRAPH AT	04	513.	12.33	74.	24.	12.	.31
+	DIVERSION TO	04RET	513.	12.33	55.	15.	7.	.31
+	HYDROGRAPH AT	RET04	283.	12.50	30.	9.	4.	.31
+	2 COMBINED AT	CP23	1092.	14.50	831.	461.	235.	26.63
+	ROUTED TO	66T23D	1087.	14.58	830.	461.	235.	26.63
+	HYDROGRAPH AT	62C	835.	12.17	98.	32.	15.	.55
	DIVERSION TO							

+	D62C	754.	12.08	55.	16.	8.	.55
+ HYDROGRAPH AT	R62C	796.	12.25	56.	16.	8.	.55
+ ROUTED TO	62CTE	501.	12.50	55.	16.	8.	.55
+ HYDROGRAPH AT	62E	229.	12.17	27.	9.	4.	.15
+ DIVERSION TO	D62E	229.	12.17	22.	6.	3.	.15
+ HYDROGRAPH AT	R62E	75.	12.50	9.	3.	1.	.15
+ 2 COMBINED AT	CP62E	576.	12.50	64.	19.	9.	.70
+ ROUTED TO	62T68A	348.	12.92	61.	19.	9.	.70
+ HYDROGRAPH AT	68A1	477.	12.08	35.	9.	4.	.30
+ HYDROGRAPH AT	68A2	107.	12.00	11.	4.	2.	.05
+ 2 COMBINED AT	CP68A1	580.	12.08	46.	13.	6.	.34
+ DIVERSION TO	D68A	580.	12.08	46.	13.	6.	.34
+ HYDROGRAPH AT	R68A	0.	.00	0.	0.	0.	.34
+ 2 COMBINED AT	CP68A2	348.	12.92	61.	19.	9.	1.05
+ ROUTED TO	68T70A	285.	13.33	60.	19.	9.	1.05
+ HYDROGRAPH AT	70A1	102.	12.08	13.	4.	2.	.05
+ HYDROGRAPH AT	23	390.	12.17	52.	16.	8.	.22
+ DIVERSION TO	23RET	390.	12.17	41.	11.	6.	.22
+ HYDROGRAPH AT	RET23	169.	12.42	20.	6.	3.	.22
+ 4 COMBINED AT	C70A1	1156.	14.58	872.	481.	245.	27.94
+ ROUTED TO	70A1T2	1149.	14.75	871.	480.	245.	27.94
+ HYDROGRAPH AT	24	468.	12.17	63.	21.	10.	.25
+ DIVERSION TO	24RET	468.	12.17	47.	13.	6.	.25
+ HYDROGRAPH AT	RET24	223.	12.33	26.	8.	4.	.25
+ HYDROGRAPH AT	70A2	79.	12.08	9.	3.	1.	.04
+ 3 COMBINED AT	CP70A2	1164.	14.75	882.	488.	249.	28.23
+ ROUTED TO	70T76A	1154.	15.08	880.	487.	248.	28.23
+ HYDROGRAPH AT	76A	2137.	12.58	427.	136.	66.	1.91
+ DIVERSION TO	D76A	2137.	12.58	338.	93.	45.	1.91
+ HYDROGRAPH AT	R76A	987.	13.00	141.	43.	21.	1.91
+ 2 COMBINED AT	C76A	1226.	15.00	934.	516.	262.	30.14
+ ROUTED TO	76ATPR	1215.	15.42	932.	515.	261.	30.14
+ HYDROGRAPH AT	73A	378.	13.33	96.	24.	12.	.95
ROUTED TO							

+	73ATB	355.	13.50	96.	24.	12.	.95
+ HYDROGRAPH AT	73B	748.	12.08	68.	20.	10.	.43
+ DIVERSION TO	73BRET	748.	12.08	68.	20.	10.	.43
+ HYDROGRAPH AT	RET73B	4.	20.75	2.	1.	0.	.43
+ 2 COMBINED AT	CP73B	355.	13.50	96.	25.	12.	1.38
+ ROUTED TO	73BTC	332.	13.83	95.	24.	12.	1.38
+ HYDROGRAPH AT	73C	822.	12.25	94.	28.	14.	.58
+ DIVERSION TO	73CRET	822.	12.25	70.	19.	9.	.58
+ HYDROGRAPH AT	RET73C	501.	12.42	33.	10.	5.	.58
+ 2 COMBINED AT	CP73C	441.	12.42	124.	33.	16.	1.96
+ ROUTED TO	73T74C	347.	14.08	122.	33.	16.	1.96
+ HYDROGRAPH AT	74A	306.	13.33	77.	19.	9.	.75
+ ROUTED TO	74ATB	300.	13.42	77.	19.	9.	.75
+ HYDROGRAPH AT	74B	455.	12.25	55.	16.	8.	.33
+ DIVERSION TO	74BRET	455.	12.25	33.	9.	4.	.33
+ HYDROGRAPH AT	RET74B	382.	12.33	27.	8.	4.	.33
+ 2 COMBINED AT	CP74B	445.	12.33	103.	27.	13.	1.08
+ ROUTED TO	74BTC	410.	12.42	103.	27.	13.	1.08
+ HYDROGRAPH AT	74C	516.	12.25	62.	18.	9.	.34
+ DIVERSION TO	74CRET	516.	12.25	42.	11.	5.	.34
+ HYDROGRAPH AT	RET74C	360.	12.42	25.	7.	3.	.34
+ 3 COMBINED AT	CP74C	713.	12.42	239.	64.	31.	3.39
+ ROUTED TO	74CT10	628.	12.58	239.	64.	31.	3.39
+ HYDROGRAPH AT	10	224.	12.42	30.	9.	4.	.17
+ DIVERSION TO	10RET	224.	12.42	24.	6.	3.	.17
+ HYDROGRAPH AT	RET10	97.	12.75	9.	3.	1.	.17
+ 2 COMBINED AT	CP10	628.	12.58	247.	67.	32.	3.56
+ ROUTED TO	10T11	645.	12.58	246.	66.	32.	3.56
+ HYDROGRAPH AT	11	135.	12.08	11.	4.	2.	.06
+ DIVERSION TO	11RET	135.	12.08	9.	3.	1.	.06
+ HYDROGRAPH AT	RET11	27.	12.25	4.	1.	1.	.06
+ 2 COMBINED AT	CP11	652.	12.58	249.	67.	32.	3.62
+ ROUTED TO	11T75	546.	13.00	248.	67.	32.	3.62
HYDROGRAPH AT							

+	02B	458.	12.17	48.	16.	8.	.24
+ DIVERSION TO	02BRET	458.	12.17	41.	11.	6.	.24
+ HYDROGRAPH AT	RET02B	90.	12.50	14.	4.	2.	.24
+ ROUTED TO	2BT1	80.	12.50	14.	4.	2.	.24
+ HYDROGRAPH AT	01	437.	12.33	51.	14.	7.	.32
+ HYDROGRAPH AT	03	397.	12.08	39.	13.	6.	.16
+ 3 COMBINED AT	CP1	633.	12.08	101.	31.	15.	.72
+ DIVERSION TO	01RET	633.	12.08	89.	24.	11.	.72
+ HYDROGRAPH AT	RET01	102.	13.00	23.	8.	4.	.72
+ ROUTED TO	1T6	85.	13.08	23.	8.	4.	.72
+ HYDROGRAPH AT	02A	379.	12.17	35.	11.	5.	.18
+ DIVERSION TO	02ARET	379.	12.17	29.	8.	4.	.18
+ HYDROGRAPH AT	RET02A	113.	12.33	10.	3.	2.	.18
+ HYDROGRAPH AT	02C	360.	12.17	38.	12.	6.	.19
+ DIVERSION TO	02CRET	360.	12.17	38.	12.	6.	.19
+ HYDROGRAPH AT	RET02C	0.	.00	0.	0.	0.	.19
+ 2 COMBINED AT	CP2	113.	12.33	10.	3.	2.	.37
+ ROUTED TO	2AT6	59.	12.50	10.	3.	2.	.37
+ HYDROGRAPH AT	06	459.	12.25	51.	16.	8.	.28
+ DIVERSION TO	06RET	459.	12.25	49.	13.	6.	.28
+ HYDROGRAPH AT	RET06	21.	13.33	8.	3.	1.	.28
+ 3 COMBINED AT	CP6	87.	13.33	38.	13.	6.	1.37
+ ROUTED TO	6T5	82.	13.42	38.	13.	6.	1.37
+ HYDROGRAPH AT	05	283.	12.17	32.	9.	5.	.14
+ DIVERSION TO	05RET	283.	12.17	25.	7.	3.	.14
+ HYDROGRAPH AT	RET05	80.	12.50	9.	3.	1.	.14
+ HYDROGRAPH AT	07	370.	12.33	41.	12.	6.	.24
+ DIVERSION TO	07RET	370.	12.33	39.	10.	5.	.24
+ HYDROGRAPH AT	RET07	28.	13.00	4.	1.	1.	.24
+ 3 COMBINED AT	CP5	99.	12.50	49.	17.	8.	1.76
+ ROUTED TO	5T12	94.	13.50	49.	17.	8.	1.76
+ HYDROGRAPH AT	12	567.	12.17	52.	16.	8.	.27
+ DIVERSION TO	12RET	567.	12.17	46.	12.	6.	.27
HYDROGRAPH AT							

+		RET12	51.	12.50	10.	3.	2.	.27
+	2 COMBINED AT	CP12	120.	12.67	57.	20.	9.	2.03
+	ROUTED TO	12T13	100.	13.58	54.	20.	9.	2.03
+	HYDROGRAPH AT	08	836.	12.58	132.	40.	19.	.77
+	DIVERSION TO	08RET	836.	12.58	122.	33.	16.	.77
+	HYDROGRAPH AT	RET08	134.	13.25	23.	7.	4.	.77
+	ROUTED TO	8T9	108.	13.33	22.	7.	4.	.77
+	HYDROGRAPH AT	09	303.	12.17	27.	9.	4.	.16
+	DIVERSION TO	09RET	303.	12.17	25.	7.	3.	.16
+	HYDROGRAPH AT	RET09	17.	12.67	5.	2.	1.	.16
+	2 COMBINED AT	CP9	117.	13.33	27.	9.	4.	.92
+	ROUTED TO	9T13	83.	13.58	26.	9.	4.	.92
+	HYDROGRAPH AT	13	481.	12.25	55.	18.	8.	.31
+	DIVERSION TO	13RET	481.	12.25	51.	14.	7.	.31
+	HYDROGRAPH AT	RET13	38.	12.92	11.	4.	2.	.31
+	3 COMBINED AT	CP13	157.	13.83	83.	30.	14.	3.26
+	ROUTED TO	13T75	156.	13.83	83.	30.	14.	3.26
+	HYDROGRAPH AT	14	229.	12.42	32.	10.	5.	.19
+	DIVERSION TO	14RET	229.	12.42	29.	8.	4.	.19
+	HYDROGRAPH AT	RET14	37.	13.00	7.	2.	1.	.19
+	3 COMBINED AT	CP75	613.	14.08	301.	91.	44.	7.07
+	ROUTED TO	75TPC	611.	14.17	300.	91.	44.	7.07
+	HYDROGRAPH AT	77A	556.	13.75	174.	43.	21.	1.74
+	ROUTED TO	77ATB	525.	13.83	173.	43.	21.	1.74
+	HYDROGRAPH AT	77B	542.	12.17	48.	14.	7.	.35
+	DIVERSION TO	77BRET	529.	12.08	31.	8.	4.	.35
+	HYDROGRAPH AT	RET77B	455.	12.25	20.	5.	3.	.35
+	2 COMBINED AT	CP77B	529.	13.83	191.	49.	23.	2.09
+	ROUTED TO	77BTC	503.	14.08	188.	49.	23.	2.09
+	HYDROGRAPH AT	77C	407.	12.25	46.	14.	7.	.28
+	DIVERSION TO	77CRET	407.	12.25	31.	8.	4.	.28
+	HYDROGRAPH AT	RET77C	280.	12.33	19.	5.	3.	.28
+	2 COMBINED AT	C77C	510.	14.08	206.	54.	26.	2.37
	ROUTED TO							

+		77CT78	493.	14.42	202.	54.	26.	2.37
+	HYDROGRAPH AT	78A	601.	13.75	188.	47.	23.	1.88
+	ROUTED TO	78ATB	520.	14.42	187.	47.	23.	1.88
+	HYDROGRAPH AT	78B	598.	12.25	62.	17.	8.	.40
+	2 COMBINED AT	C78B	608.	12.25	245.	64.	31.	2.28
+	ROUTED TO	78BTC	501.	14.75	245.	64.	31.	2.28
+	HYDROGRAPH AT	78C	494.	12.17	44.	11.	5.	.29
+	DIVERSION TO	78CRET	83.	11.75	4.	1.	1.	.29
+	HYDROGRAPH AT	RET78C	494.	12.17	40.	10.	5.	.29
+	2 COMBINED AT	C78C	821.	12.17	283.	73.	35.	2.56
+	2 COMBINED AT	C78C2	946.	14.58	470.	124.	60.	4.93
+	ROUTED TO	78CT79	935.	14.75	466.	124.	60.	4.93
+	HYDROGRAPH AT	20	451.	12.33	58.	17.	8.	.31
+	DIVERSION TO	20RET	451.	12.33	46.	12.	6.	.31
+	HYDROGRAPH AT	RET20	198.	12.67	17.	5.	2.	.31
+	2 COMBINED AT	CP22B	939.	14.75	478.	128.	62.	5.24
+	HYDROGRAPH AT	16	212.	12.17	19.	6.	3.	.11
+	DIVERSION TO	16RET	212.	12.17	16.	4.	2.	.11
+	HYDROGRAPH AT	RET16	57.	12.42	5.	1.	1.	.11
+	HYDROGRAPH AT	18	501.	12.25	52.	16.	8.	.32
+	DIVERSION TO	18RET	501.	12.25	48.	13.	6.	.32
+	HYDROGRAPH AT	RET18	52.	12.75	9.	3.	1.	.32
+	ROUTED TO	18T19	49.	12.83	9.	3.	1.	.32
+	2 COMBINED AT	CP19A	58.	12.83	14.	4.	2.	.43
+	HYDROGRAPH AT	19	206.	12.17	20.	6.	3.	.10
+	DIVERSION TO	19RET	206.	12.17	15.	4.	2.	.10
+	HYDROGRAPH AT	RET19	69.	12.42	6.	2.	1.	.10
+	2 COMBINED AT	CP19B	126.	12.42	20.	6.	3.	.53
+	HYDROGRAPH AT	17	151.	12.42	19.	6.	3.	.13
+	DIVERSION TO	17RET	151.	12.42	19.	5.	2.	.13
+	HYDROGRAPH AT	RET17	5.	13.83	2.	1.	0.	.13
+	HYDROGRAPH AT	79A	645.	13.25	155.	39.	19.	1.07
+	4 COMBINED AT	CP79A1	1093.	13.25	625.	166.	80.	6.97
	HYDROGRAPH AT							

+		78F	1077.	14.17	403.	102.	49.	4.19
+	HYDROGRAPH AT	82A1	1123.	13.50	307.	77.	37.	3.12
+	2 COMBINED AT	C82A1	1672.	13.50	681.	172.	83.	7.31
+	ROUTED TO	DB82A1	183.	16.17	157.	135.	108.	7.31
+	ROUTED TO	PS-9	183.	16.17	157.	135.	108.	7.31
+	HYDROGRAPH AT	CAP2	64.	2.00	64.	64.	62.	.01
+	ROUTED TO	RCAP2	64.	4.00	64.	64.	61.	.01
+	HYDROGRAPH AT	82A2	879.	14.75	392.	104.	50.	4.13
+	2 COMBINED AT	CP82A2	943.	14.75	456.	168.	111.	4.14
+	HYDROGRAPH AT	82A4	631.	13.83	210.	53.	25.	2.13
+	ROUTED TO	82A4T3	623.	14.00	210.	53.	25.	2.13
+	HYDROGRAPH AT	82A3	536.	14.17	199.	50.	24.	2.02
+	2 COMBINED AT	CP82A3	1108.	14.08	400.	101.	49.	4.15
+	2 COMBINED AT	CP82A5	1643.	14.08	819.	259.	155.	8.29
+	ROUTED TO	DB82B	357.	16.83	324.	252.	153.	8.29
+	ROUTED TO	MN-1	357.	16.92	324.	252.	153.	8.29
+	2 COMBINED AT	CP82A6	477.	17.00	460.	376.	254.	15.60
+	ROUTED TO	82TBOX	477.	17.08	460.	376.	254.	15.60
+	ROUTED TO	BOXCLV	477.	17.08	460.	376.	254.	15.60
+	ROUTED TO	BOXI78	477.	17.33	460.	375.	253.	15.60
+	HYDROGRAPH AT	78D	1545.	12.17	194.	62.	30.	.89
+	DIVERSION TO	D78D	1545.	12.17	154.	42.	20.	.89
+	HYDROGRAPH AT	R78D	550.	12.42	64.	20.	9.	.89
+	HYDROGRAPH AT	82B	1558.	12.17	181.	59.	29.	.92
+	DIVERSION TO	D82	14.	1.08	2.	1.	0.	.92
+	HYDROGRAPH AT	R82	1558.	12.17	181.	59.	28.	.92
+	DIVERSION TO	IRW	1558.	12.17	181.	56.	27.	.92
+	HYDROGRAPH AT	DIIRW	19.	19.33	12.	3.	1.	.92
+	3 COMBINED AT	C78D	1111.	12.58	521.	430.	287.	17.41
+	ROUTED TO	78DIE	495.	17.75	477.	387.	258.	17.41
+	HYDROGRAPH AT	78E	838.	12.75	158.	40.	19.	1.01
+	HYDROGRAPH AT	83	1378.	12.25	198.	65.	31.	1.01
+	DIVERSION TO	D83	1378.	12.25	150.	42.	20.	1.01
	HYDROGRAPH AT							

+		R83	731.	12.50	76.	23.	11.	1.01
+	3 COMBINED AT	C78E	1184.	12.75	571.	432.	282.	19.43
+	ROUTED TO	78ET84	1055.	13.17	568.	431.	282.	19.43
+	HYDROGRAPH AT	84	1309.	12.25	193.	63.	30.	.99
+	DIVERSION TO	D84	1309.	12.25	154.	43.	21.	.99
+	HYDROGRAPH AT	R84	599.	12.58	66.	21.	10.	.99
+	2 COMBINED AT	C84	1174.	13.08	610.	445.	288.	20.42
+	ROUTED TO	84T79B	1142.	13.17	609.	445.	288.	20.42
+	HYDROGRAPH AT	79B	674.	13.08	161.	40.	19.	1.00
+	2 COMBINED AT	C79B1	1721.	13.17	723.	477.	304.	21.42
+	ROUTED TO	79BTB2	1635.	13.33	721.	476.	304.	21.42
+	2 COMBINED AT	C79B2	2508.	13.33	1241.	615.	370.	28.39
+	ROUTED TO	79TPC2	2489.	13.42	1238.	615.	370.	28.39
+	2 COMBINED AT	CPPWR	2692.	13.42	1415.	670.	395.	35.46
+	ROUTED TO	PWRT80	2670.	13.50	1413.	669.	395.	35.46
+	HYDROGRAPH AT	80A	2421.	12.83	595.	189.	91.	2.64
+	DIVERSION TO	D80A	73.	8.83	53.	17.	8.	2.64
+	HYDROGRAPH AT	R80A	2421.	12.83	595.	172.	83.	2.64
+	2 COMBINED AT	CP80A	3769.	12.83	1869.	804.	465.	38.10
+	ROUTED TO	PWRSAN	3710.	13.00	1866.	804.	465.	38.10
+	2 COMBINED AT	CPSAN	3512.	13.00	2373.	1233.	680.	68.24
+	ROUTED TO	PWREMF	3454.	13.25	2367.	1233.	679.	68.24
+	2 COMBINED AT	EMFPOW	4226.	14.33	3105.	1556.	840.	90.55
+	ROUTED TO	POWIWI	4196.	14.50	3097.	1556.	838.	90.55
+	HYDROGRAPH AT	80B	1198.	12.50	223.	71.	34.	1.12
+	DIVERSION TO	D80B	15.	4.00	8.	2.	1.	1.12
+	HYDROGRAPH AT	R80B	1198.	12.50	223.	69.	33.	1.12
+	HYDROGRAPH AT	81B	1215.	12.25	180.	61.	29.	.84
+	DIVERSION TO	D81B	444.	11.92	55.	18.	8.	.84
+	HYDROGRAPH AT	R81B	1215.	12.25	153.	43.	21.	.84
+	2 COMBINED AT	80B81B	2107.	12.33	365.	111.	53.	1.96
+	2 COMBINED AT	EMFWIL	4261.	14.50	3196.	1633.	880.	92.51
+	ROUTED TO	WILTSP	4221.	14.75	3194.	1633.	878.	92.51
	HYDROGRAPH AT							

+	SUB258	1024.	13.50	462.	136.	66.	3.65
+ ROUTED TO	RO259	952.	15.17	459.	136.	66.	3.65
+ HYDROGRAPH AT	SUB260	1151.	12.33	141.	42.	20.	.98
+ DIVERSION TO	RETDIV	1151.	12.33	131.	35.	17.	.98
+ HYDROGRAPH AT	R260	123.	12.92	21.	7.	3.	.98
+ 2 COMBINED AT	CO262	962.	15.17	473.	141.	68.	4.63
+ ROUTED TO	RO263	913.	16.75	471.	141.	68.	4.63
+ HYDROGRAPH AT	SUB264	1066.	12.42	154.	47.	23.	1.00
+ DIVERSION TO	RETDIV	1066.	12.42	137.	37.	18.	1.00
+ HYDROGRAPH AT	R264	235.	12.92	32.	10.	5.	1.00
+ 2 COMBINED AT	CO266	920.	16.75	480.	148.	71.	5.63
+ ROUTED TO	RO267	771.	20.08	471.	147.	71.	5.63
+ HYDROGRAPH AT	SUB268	736.	12.75	154.	48.	23.	.97
+ DIVERSION TO	RETDIV	736.	12.75	126.	34.	16.	.97
+ HYDROGRAPH AT	R268	306.	13.33	44.	13.	6.	.97
+ 2 COMBINED AT	CO270	774.	20.08	475.	157.	76.	6.60
+ ROUTED TO	RO283	708.	22.92	467.	156.	76.	6.60
+ HYDROGRAPH AT	88A	1139.	12.00	119.	41.	20.	.50
+ DIVERSION TO	D88A	1139.	12.00	88.	25.	12.	.50
+ HYDROGRAPH AT	R88A	602.	12.17	51.	16.	8.	.50
+ ROUTED TO	88AT89	198.	12.58	48.	16.	8.	.50
+ HYDROGRAPH AT	89A	1009.	12.08	118.	41.	20.	.50
+ DIVERSION TO	D89A	1009.	12.08	88.	25.	12.	.50
+ HYDROGRAPH AT	R89A	565.	12.25	50.	16.	7.	.50
+ 2 COMBINED AT	C89A	566.	12.25	98.	31.	15.	1.00
+ ROUTED TO	89ATR1	319.	12.67	95.	31.	15.	1.00
+ 2 COMBINED AT	C283	722.	22.92	480.	182.	88.	7.60
+ ROUTED TO	283T90	719.	23.17	479.	182.	88.	7.60
+ HYDROGRAPH AT	90A	939.	12.08	98.	33.	16.	.48
+ DIVERSION TO	D90A	939.	12.08	76.	21.	10.	.48
+ HYDROGRAPH AT	R90A	456.	12.25	37.	12.	6.	.48
+ 2 COMBINED AT	C90A	724.	23.17	481.	190.	92.	8.08
+ ROUTED TO	90A1E	720.	23.33	480.	190.	92.	8.08
HYDROGRAPH AT							

+		87A	1041.	12.08	116.	40.	19.	.49
+	DIVERSION TO	D87A	1041.	12.08	87.	25.	12.	.49
+	HYDROGRAPH AT	R87A	435.	12.25	49.	15.	7.	.49
+	ROUTED TO	87A1B	182.	12.75	47.	15.	7.	.49
+	HYDROGRAPH AT	87B	1022.	12.08	117.	40.	19.	.49
+	DIVERSION TO	D87B	1022.	12.08	87.	25.	12.	.49
+	HYDROGRAPH AT	R87B	512.	12.25	50.	15.	7.	.49
+	2 COMBINED AT	C87	512.	12.25	95.	31.	15.	.98
+	ROUTED TO	87T88B	248.	12.92	92.	31.	15.	.98
+	HYDROGRAPH AT	88B	1034.	12.08	118.	41.	20.	.50
+	DIVERSION TO	D88B	1034.	12.08	89.	25.	12.	.50
+	HYDROGRAPH AT	R88B	516.	12.25	49.	15.	7.	.50
+	2 COMBINED AT	C88B	505.	12.25	137.	45.	22.	1.48
+	ROUTED TO	88T89B	314.	13.33	134.	45.	22.	1.48
+	HYDROGRAPH AT	89B	1047.	12.08	117.	40.	19.	.50
+	DIVERSION TO	D89B	1047.	12.08	87.	25.	12.	.50
+	HYDROGRAPH AT	R89B	438.	12.17	50.	16.	7.	.50
+	2 COMBINED AT	C89B	433.	12.25	177.	60.	29.	1.98
+	ROUTED TO	89TB90	355.	13.92	172.	60.	29.	1.98
+	HYDROGRAPH AT	90B	668.	12.67	128.	39.	19.	.82
+	DIVERSION TO	D90B	379.	12.25	39.	12.	6.	.82
+	HYDROGRAPH AT	R90B	668.	12.67	101.	27.	13.	.82
+	3 COMBINED AT	C90	752.	23.33	509.	260.	126.	10.88
+	ROUTED TO	90T91	748.	23.75	508.	259.	126.	10.88
+	HYDROGRAPH AT	85	1328.	12.25	192.	63.	31.	1.00
+	DIVERSION TO	D85	1328.	12.25	152.	42.	20.	1.00
+	HYDROGRAPH AT	R85	591.	12.58	68.	21.	10.	1.00
+	ROUTED TO	85T86	334.	12.92	66.	21.	10.	1.00
+	HYDROGRAPH AT	86	1342.	12.25	193.	64.	31.	1.00
+	DIVERSION TO	D86	1342.	12.25	154.	43.	21.	1.00
+	HYDROGRAPH AT	R86	594.	12.58	67.	21.	10.	1.00
+	2 COMBINED AT	C86	495.	12.58	126.	40.	19.	2.00
+	ROUTED TO	86T91	454.	13.17	123.	40.	19.	2.00
	HYDROGRAPH AT							

+		91	667.	12.25	89.	29.	14.	.46
+	DIVERSION TO	D91	667.	12.25	69.	19.	9.	.46
+	HYDROGRAPH AT	RET91	302.	12.50	33.	10.	5.	.46
+	HYDROGRAPH AT	81A	1656.	12.67	359.	119.	57.	1.81
+	DIVERSION TO	D81A	29.	2.67	10.	3.	1.	1.81
+	HYDROGRAPH AT	R81A	1656.	12.67	359.	117.	56.	1.81
+	4 COMBINED AT	CP91	1667.	12.67	718.	387.	193.	15.15
+	ROUTED TO	91TEMF	1591.	12.75	717.	387.	193.	15.15
+	2 COMBINED AT	EMFRIT	4514.	13.58	3602.	1905.	1017.	107.66

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SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR STORM = 1 STORM AREA (SQ MI) = .01									
65AT-3	MANE	.66	536.60	864.90	.34	5.00	536.59	865.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+03 EXCESS= .0000E+00 OUTFLOW= .3128E+03 BASIN STORAGE= .4892E-02 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00									
65AT-3	MANE	.66	536.11	865.06	.34	5.00	536.11	865.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3107E+03 EXCESS= .0000E+00 OUTFLOW= .3107E+03 BASIN STORAGE= .4697E-02 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00									
65AT-3	MANE	.66	533.76	865.17	.33	5.00	533.76	865.00	.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3011E+03 EXCESS= .0000E+00 OUTFLOW= .3011E+03 BASIN STORAGE= .3984E-02 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00									
65AT-3	MANE	.66	530.80	864.82	.32	5.00	530.79	865.00	.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2893E+03 EXCESS= .0000E+00 OUTFLOW= .2893E+03 BASIN STORAGE= .3200E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00									
65AT-3	MANE	.66	526.93	864.77	.30	5.00	526.90	865.00	.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2740E+03 EXCESS= .0000E+00 OUTFLOW= .2740E+03 BASIN STORAGE= .2309E-02 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00									
65AT-3	MANE	.66	522.15	865.02	.28	5.00	522.15	865.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2580E+03 EXCESS= .0000E+00 OUTFLOW= .2580E+03 BASIN STORAGE= .1674E-02 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00									
65AT-3	MANE	.66	520.51	864.89	.28	5.00	520.49	865.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2522E+03 EXCESS= .0000E+00 OUTFLOW= .2522E+03 BASIN STORAGE= .1465E-02 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00									
65AT-3	MANE	.66	518.36	864.97	.27	5.00	518.35	865.00	.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2458E+03 EXCESS= .0000E+00 OUTFLOW= .2458E+03 BASIN STORAGE= .1312E-02 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00									
65AT-3	MANE	.66	517.00	864.74	.26	5.00	516.98	865.00	.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2415E+03 EXCESS= .0000E+00 OUTFLOW= .2415E+03 BASIN STORAGE= .1222E-02 PERCENT ERROR= .0

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

65T66	MANE	.61	547.56	864.97	.38	5.00	547.56	865.00	.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3435E+03 EXCESS= .0000E+00 OUTFLOW= .3435E+03 BASIN STORAGE= .1930E-01 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

65T66	MANE	.61	546.92	865.16	.37	5.00	546.91	865.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3409E+03 EXCESS= .0000E+00 OUTFLOW= .3409E+03 BASIN STORAGE= .1880E-01 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

65T66	MANE	.61	543.87	864.90	.36	5.00	543.87	865.00	.36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3288E+03 EXCESS= .0000E+00 OUTFLOW= .3288E+03 BASIN STORAGE= .1629E-01 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

65T66	MANE	.61	539.92	864.94	.34	5.00	539.92	865.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+03 EXCESS= .0000E+00 OUTFLOW= .3128E+03 BASIN STORAGE= .8965E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

65T66	MANE	.61	534.69	864.79	.32	5.00	534.69	865.00	.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2892E+03 EXCESS= .0000E+00 OUTFLOW= .2892E+03 BASIN STORAGE= .2374E-02 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

65T66	MANE	.61	527.81	865.19	.29	5.00	527.79	865.00	.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2651E+03 EXCESS= .0000E+00 OUTFLOW= .2651E+03 BASIN STORAGE= .1573E-02 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

65T66	MANE	.61	524.12	865.18	.28	5.00	524.10	865.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2565E+03 EXCESS= .0000E+00 OUTFLOW= .2565E+03 BASIN STORAGE= .1374E-02 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

65T66	MANE	.62	518.25	865.26	.27	5.00	518.23	865.00	.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2478E+03 EXCESS= .0000E+00 OUTFLOW= .2478E+03 BASIN STORAGE= .1230E-02 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

65T66	MANE	.62	516.88	865.11	.27	5.00	516.87	865.00	.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2427E+03 EXCESS= .0000E+00 OUTFLOW= .2426E+03 BASIN STORAGE= .1144E-02 PERCENT ERROR= .0

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

65T66A	MANE	.69	547.45	865.27	.38	5.00	547.43	865.00	.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3435E+03 EXCESS= .0000E+00 OUTFLOW= .3435E+03 BASIN STORAGE= .2191E-01 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

65T66A	MANE	.69	546.80	865.46	.37	5.00	546.79	865.00	.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3409E+03 EXCESS= .0000E+00 OUTFLOW= .3409E+03 BASIN STORAGE= .2134E-01 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

65T66A	MANE	.69	543.78	865.04	.36	5.00	543.77	865.00	.36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3288E+03 EXCESS= .0000E+00 OUTFLOW= .3288E+03 BASIN STORAGE= .1851E-01 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

65T66A	MANE	.69	539.80	864.92	.34	5.00	539.80	865.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+03 EXCESS= .0000E+00 OUTFLOW= .3128E+03 BASIN STORAGE= .1021E-01 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

65T66A	MANE	.69	534.57	865.20	.32	5.00	534.55	865.00	.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2892E+03 EXCESS= .0000E+00 OUTFLOW= .2892E+03 BASIN STORAGE= .2703E-02 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

65T66A	MANE	.70	527.63	865.36	.29	5.00	527.60	865.00	.29

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CONTINUITY SUMMARY (AC-FT) - INFLOW= .2651E+03 EXCESS= .0000E+00 OUTFLOW= .2651E+03 BASIN STORAGE= .1791E-02 PERCENT ERROR=    .0

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
            65T66A  MANE          .70    523.94    865.19       .28      5.00    523.91    865.00         .28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2565E+03 EXCESS= .0000E+00 OUTFLOW= .2565E+03 BASIN STORAGE= .1565E-02 PERCENT ERROR=    .0

          FOR STORM = 8  STORM AREA (SQ MI) =     120.00
            65T66A  MANE          .70    518.09    865.04       .27      5.00    518.08    865.00         .27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2478E+03 EXCESS= .0000E+00 OUTFLOW= .2478E+03 BASIN STORAGE= .1401E-02 PERCENT ERROR=    .0

          FOR STORM = 9  STORM AREA (SQ MI) =     150.00
            65T66A  MANE          .70    516.67    865.50       .27      5.00    516.62    865.00         .27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2426E+03 EXCESS= .0000E+00 OUTFLOW= .2426E+03 BASIN STORAGE= .1302E-02 PERCENT ERROR=    .0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
            65T66B  MANE          .73    547.32    865.26       .38      5.00    547.28    865.00         .38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3435E+03 EXCESS= .0000E+00 OUTFLOW= .3435E+03 BASIN STORAGE= .2312E-01 PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
            65T66B  MANE          .73    546.69    865.47       .37      5.00    546.64    865.00         .37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3409E+03 EXCESS= .0000E+00 OUTFLOW= .3409E+03 BASIN STORAGE= .2253E-01 PERCENT ERROR=    .0

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
            65T66B  MANE          .73    543.67    865.68       .36      5.00    543.63    865.00         .36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3288E+03 EXCESS= .0000E+00 OUTFLOW= .3288E+03 BASIN STORAGE= .1955E-01 PERCENT ERROR=    .0

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
            65T66B  MANE          .73    539.68    865.51       .34      5.00    539.62    865.00         .34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3128E+03 EXCESS= .0000E+00 OUTFLOW= .3127E+03 BASIN STORAGE= .1083E-01 PERCENT ERROR=    .0

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
            65T66B  MANE          .73    534.43    865.73       .32      5.00    534.41    865.00         .32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2892E+03 EXCESS= .0000E+00 OUTFLOW= .2892E+03 BASIN STORAGE= .2862E-02 PERCENT ERROR=    .0

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
            65T66B  MANE          .73    527.46    865.78       .29      5.00    527.39    865.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2651E+03 EXCESS= .0000E+00 OUTFLOW= .2651E+03 BASIN STORAGE= .1894E-02 PERCENT ERROR=    .0

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
            65T66B  MANE          .74    523.75    865.54       .28      5.00    523.66    865.00         .28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2565E+03 EXCESS= .0000E+00 OUTFLOW= .2565E+03 BASIN STORAGE= .1657E-02 PERCENT ERROR=    .0

          FOR STORM = 8  STORM AREA (SQ MI) =     120.00
            65T66B  MANE          .74    517.89    865.25       .27      5.00    517.83    865.00         .27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2479E+03 EXCESS= .0000E+00 OUTFLOW= .2479E+03 BASIN STORAGE= .1482E-02 PERCENT ERROR=    .0

          FOR STORM = 9  STORM AREA (SQ MI) =     150.00
            65T66B  MANE          .74    516.44    865.75       .27      5.00    516.26    865.00         .27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2427E+03 EXCESS= .0000E+00 OUTFLOW= .2426E+03 BASIN STORAGE= .1379E-02 PERCENT ERROR=    .0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
            66C1T2  MANE          .75    410.00    891.72      2.90      5.00    410.00    895.00        2.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5167E+03 EXCESS= .0000E+00 OUTFLOW= .5167E+03 BASIN STORAGE= .1175E-02 PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
            66C1T2  MANE          .75    410.00    891.72      2.90      5.00    410.00    895.00        2.90
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .5159E+03 EXCESS= .0000E+00 OUTFLOW= .5159E+03 BASIN STORAGE= .1175E-02 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

66C1T2	MANE	.75	409.93	905.92	2.88	5.00	409.93	905.00	2.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5122E+03 EXCESS= .0000E+00 OUTFLOW= .5122E+03 BASIN STORAGE= .1174E-02 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

66C1T2	MANE	.75	409.67	906.02	2.84	5.00	409.67	905.00	2.84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5058E+03 EXCESS= .0000E+00 OUTFLOW= .5058E+03 BASIN STORAGE= .1173E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

66C1T2	MANE	.75	409.24	915.93	2.78	5.00	409.24	915.00	2.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4959E+03 EXCESS= .0000E+00 OUTFLOW= .4959E+03 BASIN STORAGE= .1174E-02 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

66C1T2	MANE	.75	405.86	960.82	2.74	5.00	405.85	960.00	2.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4889E+03 EXCESS= .0000E+00 OUTFLOW= .4889E+03 BASIN STORAGE= .1175E-02 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

66C1T2	MANE	.75	405.37	930.39	2.73	5.00	405.37	930.00	2.73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4866E+03 EXCESS= .0000E+00 OUTFLOW= .4866E+03 BASIN STORAGE= .1174E-02 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

66C1T2	MANE	.75	405.32	930.41	2.72	5.00	405.32	930.00	2.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4849E+03 EXCESS= .0000E+00 OUTFLOW= .4849E+03 BASIN STORAGE= .1174E-02 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

66C1T2	MANE	.75	405.29	930.41	2.72	5.00	405.29	930.00	2.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4838E+03 EXCESS= .0000E+00 OUTFLOW= .4838E+03 BASIN STORAGE= .1174E-02 PERCENT ERROR= .0

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

66CTD	MANE	.32	956.20	865.37	.79	5.00	956.17	865.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8602E+03 EXCESS= .0000E+00 OUTFLOW= .8602E+03 BASIN STORAGE= .1150E-01 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

66CTD	MANE	.32	955.49	865.18	.78	5.00	955.46	865.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8568E+03 EXCESS= .0000E+00 OUTFLOW= .8568E+03 BASIN STORAGE= .1121E-01 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

66CTD	MANE	.32	952.15	865.44	.77	5.00	952.11	865.00	.77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8410E+03 EXCESS= .0000E+00 OUTFLOW= .8410E+03 BASIN STORAGE= .9771E-02 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

66CTD	MANE	.32	947.73	865.33	.75	5.00	947.71	865.00	.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8185E+03 EXCESS= .0000E+00 OUTFLOW= .8185E+03 BASIN STORAGE= .5567E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

66CTD	MANE	.32	939.08	865.64	.72	5.00	939.02	865.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7852E+03 EXCESS= .0000E+00 OUTFLOW= .7852E+03 BASIN STORAGE= .1770E-02 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

66CTD	MANE	.32	928.75	865.59	.69	5.00	928.67	865.00	.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7540E+03 EXCESS= .0000E+00 OUTFLOW= .7540E+03 BASIN STORAGE= .1332E-02 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

66CTD	MANE	.32	924.93	865.40	.68	5.00	924.86	865.00	.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7430E+03 EXCESS= .0000E+00 OUTFLOW= .7430E+03 BASIN STORAGE= .1226E-02 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

66CTD	MANE	.32	918.36	865.99	.67	5.00	918.22	865.00	.67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7327E+03 EXCESS= .0000E+00 OUTFLOW= .7327E+03 BASIN STORAGE= .1149E-02 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

66CTD	MANE	.32	915.74	865.80	.67	5.00	915.51	865.00	.67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7264E+03 EXCESS= .0000E+00 OUTFLOW= .7264E+03 BASIN STORAGE= .1104E-02 PERCENT ERROR= .0

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

RC-WA	MANE	.69	973.81	866.25	.72	5.00	973.69	865.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9162E+03 EXCESS= .0000E+00 OUTFLOW= .9162E+03 BASIN STORAGE= .5332E-01 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

RC-WA	MANE	.69	973.09	865.71	.72	5.00	972.97	865.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9126E+03 EXCESS= .0000E+00 OUTFLOW= .9126E+03 BASIN STORAGE= .5280E-01 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

RC-WA	MANE	.70	969.48	866.34	.71	5.00	969.30	865.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8963E+03 EXCESS= .0000E+00 OUTFLOW= .8962E+03 BASIN STORAGE= .5016E-01 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

RC-WA	MANE	.70	963.76	866.66	.69	5.00	963.54	870.00	.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8731E+03 EXCESS= .0000E+00 OUTFLOW= .8730E+03 BASIN STORAGE= .4299E-01 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

RC-WA	MANE	.70	953.93	869.84	.66	5.00	953.91	870.00	.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8393E+03 EXCESS= .0000E+00 OUTFLOW= .8393E+03 BASIN STORAGE= .3736E-01 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

RC-WA	MANE	.70	942.31	869.89	.64	5.00	942.30	870.00	.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8078E+03 EXCESS= .0000E+00 OUTFLOW= .8077E+03 BASIN STORAGE= .3674E-01 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

RC-WA	MANE	.70	938.31	869.94	.63	5.00	938.30	870.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7967E+03 EXCESS= .0000E+00 OUTFLOW= .7967E+03 BASIN STORAGE= .3658E-01 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

RC-WA	MANE	.70	931.44	869.81	.62	5.00	931.43	870.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7862E+03 EXCESS= .0000E+00 OUTFLOW= .7862E+03 BASIN STORAGE= .3642E-01 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

RC-WA	MANE	.70	928.44	869.67	.61	5.00	928.42	870.00	.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7798E+03 EXCESS= .0000E+00 OUTFLOW= .7798E+03 BASIN STORAGE= .3625E-01 PERCENT ERROR= .0

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

66T66D	MANE	1.00	973.60	866.70	.77	5.00	973.39	870.00	.77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9828E+03 EXCESS= .0000E+00 OUTFLOW= .9827E+03 BASIN STORAGE= .1183E+00 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

66T66D	MANE	1.00	972.87	866.82	.77	5.00	972.65	870.00	.77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9778E+03 EXCESS= .0000E+00 OUTFLOW= .9777E+03 BASIN STORAGE= .1175E+00 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

66T66D	MANE	1.01	969.21	866.48	.75	5.00	969.04	870.00	.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9577E+03 EXCESS= .0000E+00 OUTFLOW= .9576E+03 BASIN STORAGE= .1118E+00 PERCENT ERROR= .0

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          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
            66T66D  MANE          1.01    963.53    869.51       .73       5.00    963.49    870.00          .73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9316E+03 EXCESS= .0000E+00 OUTFLOW= .9316E+03 BASIN STORAGE= .9988E-01 PERCENT ERROR=    .0

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
            66T66D  MANE          1.01    953.76    870.25       .70       5.00    953.73    870.00          .70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8946E+03 EXCESS= .0000E+00 OUTFLOW= .8946E+03 BASIN STORAGE= .8857E-01 PERCENT ERROR=    .0

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
            66T66D  MANE          1.01    942.14    870.36       .67       5.00    942.11    870.00          .67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8573E+03 EXCESS= .0000E+00 OUTFLOW= .8573E+03 BASIN STORAGE= .7385E-01 PERCENT ERROR=    .0

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
            66T66D  MANE          1.01    938.15    870.09       .66       5.00    938.13    870.00          .66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8435E+03 EXCESS= .0000E+00 OUTFLOW= .8435E+03 BASIN STORAGE= .6248E-01 PERCENT ERROR=    .0

          FOR STORM = 8  STORM AREA (SQ MI) =     120.00
            66T66D  MANE          1.01    931.21    870.37       .65       5.00    931.15    870.00          .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8294E+03 EXCESS= .0000E+00 OUTFLOW= .8294E+03 BASIN STORAGE= .5638E-01 PERCENT ERROR=    .0

          FOR STORM = 9  STORM AREA (SQ MI) =     150.00
            66T66D  MANE          1.01    928.18    870.93       .65       5.00    928.16    870.00          .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8208E+03 EXCESS= .0000E+00 OUTFLOW= .8208E+03 BASIN STORAGE= .5451E-01 PERCENT ERROR=    .0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
            66-66D  MANE          2.16    973.38    869.99       .77       5.00    973.38    870.00          .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9827E+03 EXCESS= .0000E+00 OUTFLOW= .9824E+03 BASIN STORAGE= .2556E+00 PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
            66-66D  MANE          2.16    972.63    870.13       .77       5.00    972.62    870.00          .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9778E+03 EXCESS= .0000E+00 OUTFLOW= .9775E+03 BASIN STORAGE= .2538E+00 PERCENT ERROR=    .0

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
            66-66D  MANE          2.17    968.86    870.77       .75       5.00    968.85    870.00          .75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9576E+03 EXCESS= .0000E+00 OUTFLOW= .9574E+03 BASIN STORAGE= .2416E+00 PERCENT ERROR=    .0

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
            66-66D  MANE          2.17    963.26    869.61       .73       5.00    963.24    870.00          .73

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9316E+03 EXCESS= .0000E+00 OUTFLOW= .9314E+03 BASIN STORAGE= .2158E+00 PERCENT ERROR=    .0

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
            66-66D  MANE          2.17    953.30    871.37       .70       5.00    953.12    870.00          .70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8946E+03 EXCESS= .0000E+00 OUTFLOW= .8944E+03 BASIN STORAGE= .1914E+00 PERCENT ERROR=    .0

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
            66-66D  MANE          2.18    941.66    871.34       .67       5.00    941.45    870.00          .67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8573E+03 EXCESS= .0000E+00 OUTFLOW= .8571E+03 BASIN STORAGE= .1604E+00 PERCENT ERROR=    .0

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
            66-66D  MANE          2.18    937.72    872.08       .66       5.00    937.58    870.00          .66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8434E+03 EXCESS= .0000E+00 OUTFLOW= .8433E+03 BASIN STORAGE= .1359E+00 PERCENT ERROR=    .0

          FOR STORM = 8  STORM AREA (SQ MI) =     120.00
            66-66D  MANE          2.18    930.59    871.20       .65       5.00    930.25    870.00          .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8294E+03 EXCESS= .0000E+00 OUTFLOW= .8292E+03 BASIN STORAGE= .1222E+00 PERCENT ERROR=    .0
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          FOR STORM = 9  STORM AREA (SQ MI) =     150.00
            66-66D  MANE          2.18    927.56    871.75        .65       5.00    927.12    870.00          .65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8208E+03 EXCESS= .0000E+00 OUTFLOW= .8207E+03 BASIN STORAGE= .1180E+00 PERCENT ERROR=    .0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
            66T23A  MANE          .32   1184.49    835.24        .76       5.00   1184.42    835.00          .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1073E+04 EXCESS= .0000E+00 OUTFLOW= .1073E+04 BASIN STORAGE= .3994E-01 PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
            66T23A  MANE          .33   1179.02    839.95        .76       5.00   1178.97    840.00          .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1067E+04 EXCESS= .0000E+00 OUTFLOW= .1067E+04 BASIN STORAGE= .3967E-01 PERCENT ERROR=    .0

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
            66T23A  MANE          .33   1149.35    844.86        .74       5.00   1149.31    845.00          .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1038E+04 EXCESS= .0000E+00 OUTFLOW= .1038E+04 BASIN STORAGE= .3776E-01 PERCENT ERROR=    .0

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
            66T23A  MANE          .33   1115.98    850.18        .71       5.00   1115.92    850.00          .71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1001E+04 EXCESS= .0000E+00 OUTFLOW= .1001E+04 BASIN STORAGE= .3374E-01 PERCENT ERROR=    .0

          FOR STORM = 5  STORM AREA (SQ MI) =      30.00
            66T23A  MANE          .33   1074.42    865.24        .68       5.00   1074.35    865.00          .68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9512E+03 EXCESS= .0000E+00 OUTFLOW= .9512E+03 BASIN STORAGE= .2992E-01 PERCENT ERROR=    .0

          FOR STORM = 6  STORM AREA (SQ MI) =      60.00
            66T23A  MANE          .34    979.88    869.91        .64       5.00    979.87    870.00          .64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9009E+03 EXCESS= .0000E+00 OUTFLOW= .9008E+03 BASIN STORAGE= .2512E-01 PERCENT ERROR=    .0

          FOR STORM = 7  STORM AREA (SQ MI) =      90.00
            66T23A  MANE          .34    975.13    870.07        .63       5.00    975.12    870.00          .63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8822E+03 EXCESS= .0000E+00 OUTFLOW= .8822E+03 BASIN STORAGE= .2129E-01 PERCENT ERROR=    .0

          FOR STORM = 8  STORM AREA (SQ MI) =     120.00
            66T23A  MANE          .34    966.61    870.17        .62       5.00    966.46    870.00          .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8635E+03 EXCESS= .0000E+00 OUTFLOW= .8634E+03 BASIN STORAGE= .1912E-01 PERCENT ERROR=    .0

          FOR STORM = 9  STORM AREA (SQ MI) =     150.00
            66T23A  MANE          .34    942.44    870.17        .61       5.00    942.35    870.00          .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8520E+03 EXCESS= .0000E+00 OUTFLOW= .8520E+03 BASIN STORAGE= .1846E-01 PERCENT ERROR=    .0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
            66T23B  MANE          1.48   1183.52    838.86        .76       5.00   1183.43    840.00          .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1073E+04 EXCESS= .0000E+00 OUTFLOW= .1073E+04 BASIN STORAGE= .1817E+00 PERCENT ERROR=    .0

          FOR STORM = 2  STORM AREA (SQ MI) =       1.00
            66T23B  MANE          1.48   1178.14    839.64        .76       5.00   1178.05    840.00          .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1067E+04 EXCESS= .0000E+00 OUTFLOW= .1066E+04 BASIN STORAGE= .1804E+00 PERCENT ERROR=    .0

          FOR STORM = 3  STORM AREA (SQ MI) =       5.00
            66T23B  MANE          1.49   1148.32    845.41        .74       5.00   1148.20    845.00          .74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1038E+04 EXCESS= .0000E+00 OUTFLOW= .1038E+04 BASIN STORAGE= .1718E+00 PERCENT ERROR=    .0

          FOR STORM = 4  STORM AREA (SQ MI) =      10.00
            66T23B  MANE          1.49   1114.96    854.90        .71       5.00   1114.92    855.00          .71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1001E+04 EXCESS= .0000E+00 OUTFLOW= .1001E+04 BASIN STORAGE= .1537E+00 PERCENT ERROR=    .0
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FOR STORM = 5 STORM AREA (SQ MI) = 30.00

66T23B	MANE	1.51	1073.66	868.94	.68	5.00	1073.53	870.00	.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9512E+03 EXCESS= .0000E+00 OUTFLOW= .9510E+03 BASIN STORAGE= .1362E+00 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

66T23B	MANE	1.53	979.22	871.28	.64	5.00	979.17	870.00	.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9008E+03 EXCESS= .0000E+00 OUTFLOW= .9007E+03 BASIN STORAGE= .1145E+00 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

66T23B	MANE	1.54	974.42	870.58	.63	5.00	974.28	870.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8822E+03 EXCESS= .0000E+00 OUTFLOW= .8821E+03 BASIN STORAGE= .9712E-01 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

66T23B	MANE	1.54	965.08	873.68	.62	5.00	965.07	875.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8635E+03 EXCESS= .0000E+00 OUTFLOW= .8633E+03 BASIN STORAGE= .8705E-01 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

66T23B	MANE	1.55	941.50	875.02	.61	5.00	941.50	875.00	.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8520E+03 EXCESS= .0000E+00 OUTFLOW= .8519E+03 BASIN STORAGE= .8405E-01 PERCENT ERROR= .0

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

CULVT	MANE	.31	1182.75	839.96	.76	5.00	1182.74	840.00	.76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1073E+04 EXCESS= .0000E+00 OUTFLOW= .1073E+04 BASIN STORAGE= .3863E-01 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = 1.00

CULVT	MANE	.31	1177.21	840.14	.76	5.00	1177.19	840.00	.76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1066E+04 EXCESS= .0000E+00 OUTFLOW= .1066E+04 BASIN STORAGE= .3836E-01 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 5.00

CULVT	MANE	.32	1147.35	845.09	.74	5.00	1147.31	845.00	.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1038E+04 EXCESS= .0000E+00 OUTFLOW= .1038E+04 BASIN STORAGE= .3654E-01 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 10.00

CULVT	MANE	.32	1114.31	854.82	.71	5.00	1114.30	855.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1001E+04 EXCESS= .0000E+00 OUTFLOW= .1001E+04 BASIN STORAGE= .3269E-01 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 30.00

CULVT	MANE	.32	1073.02	869.95	.68	5.00	1073.01	870.00	.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9511E+03 EXCESS= .0000E+00 OUTFLOW= .9511E+03 BASIN STORAGE= .2896E-01 PERCENT ERROR= .0

FOR STORM = 6 STORM AREA (SQ MI) = 60.00

CULVT	MANE	.33	978.76	870.16	.64	5.00	978.73	870.00	.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9007E+03 EXCESS= .0000E+00 OUTFLOW= .9006E+03 BASIN STORAGE= .2436E-01 PERCENT ERROR= .0

FOR STORM = 7 STORM AREA (SQ MI) = 90.00

CULVT	MANE	.33	973.84	870.05	.63	5.00	973.82	870.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8821E+03 EXCESS= .0000E+00 OUTFLOW= .8821E+03 BASIN STORAGE= .2068E-01 PERCENT ERROR= .0

FOR STORM = 8 STORM AREA (SQ MI) = 120.00

CULVT	MANE	.33	964.53	874.94	.62	5.00	964.51	875.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8634E+03 EXCESS= .0000E+00 OUTFLOW= .8633E+03 BASIN STORAGE= .1852E-01 PERCENT ERROR= .0

FOR STORM = 9 STORM AREA (SQ MI) = 150.00

CULVT	MANE	.33	941.07	875.01	.61	5.00	941.06	875.00	.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8518E+03 EXCESS= .0000E+00 OUTFLOW= .8517E+03 BASIN STORAGE= .1787E-01 PERCENT ERROR= .0

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


   -----DSS---ZCLOSE Unit:  71,   File: WS2-NEM.DSS
              Pointer Utilization:    .30
              Number of Records:      70
              File Size:     131.5  Kbytes
              Percent Inactive:      .0
```

NOAA Atlas Precipitation Data

POINT PRECIPITATION FREQUENCY ESTIMATES FROM NOAA ATLAS 14

Arizona 33.3325 N 111.62 W 1420 feet

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 1, Version 4
G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley
NOAA, National Weather Service, Silver Spring, Maryland, 2006

Extracted: Mon Oct 22 2007

Confidence Limits | Seasonality | Location Maps | Other Info. | GIS data | Maps | Help | D

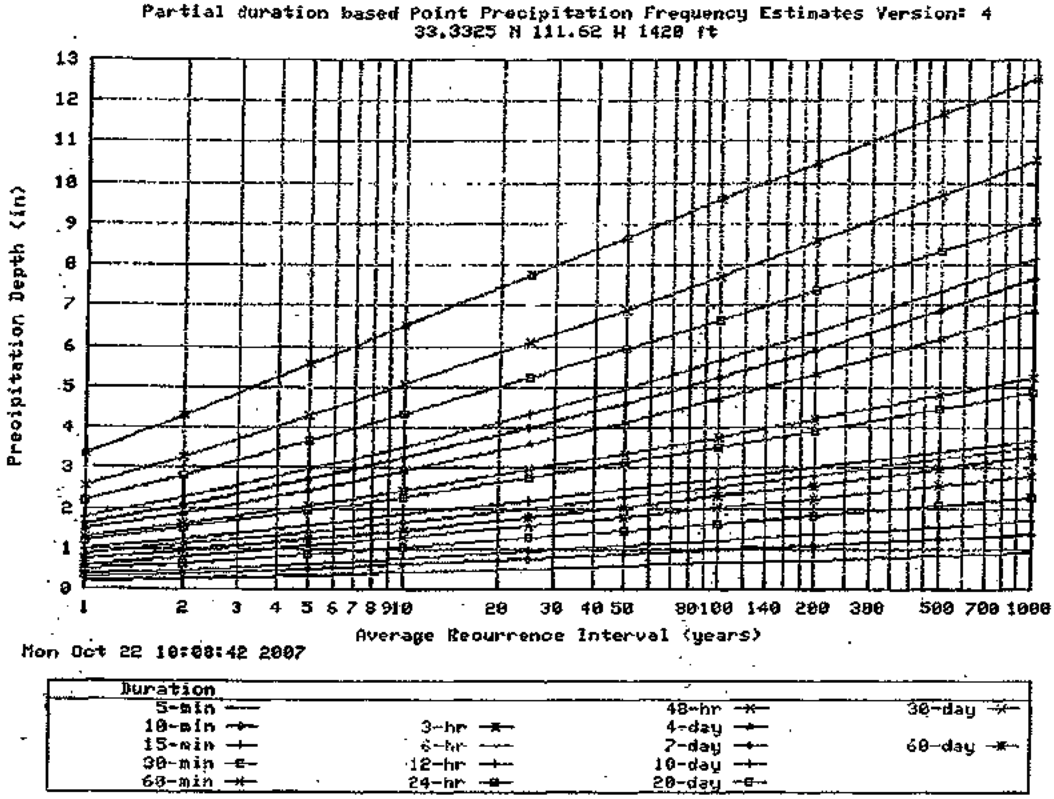
Precipitation Frequency Estimates (inches)

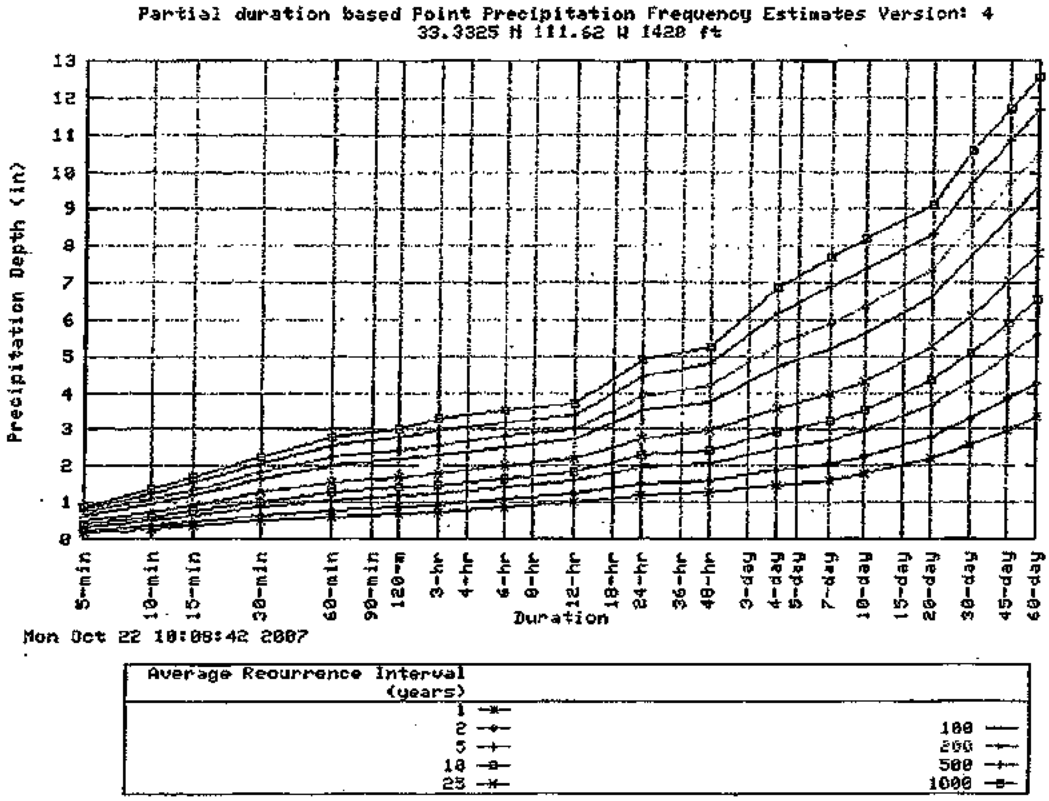
ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.19	0.29	0.36	0.48	0.60	0.68	0.73	0.88	0.99	1.21	1.27	1.47	1.62	1.77	2.19	2.56	2.99	3.33
2	0.25	0.38	0.47	0.63	0.78	0.89	0.93	1.11	1.26	1.52	1.61	1.87	2.07	2.25	2.81	3.28	3.84	4.28
5	0.34	0.51	0.64	0.85	1.06	1.18	1.22	1.42	1.58	1.95	2.08	2.45	2.71	2.96	3.68	4.29	5.02	5.58
10	0.40	0.61	0.76	1.03	1.27	1.40	1.45	1.66	1.84	2.29	2.44	2.92	3.24	3.52	4.35	5.06	5.90	6.53
25	0.50	0.76	0.94	1.26	1.56	1.71	1.77	2.00	2.19	2.75	2.95	3.59	3.98	4.32	5.25	6.10	7.05	7.76
50	0.57	0.86	1.07	1.44	1.78	1.95	2.03	2.26	2.46	3.12	3.35	4.13	4.59	4.96	5.94	6.91	7.93	8.68
100	0.64	0.97	1.21	1.63	2.01	2.19	2.30	2.54	2.74	3.51	3.77	4.70	5.24	5.64	6.65	7.73	8.81	9.60
200	0.71	1.09	1.35	1.81	2.24	2.44	2.58	2.82	3.02	3.90	4.20	5.31	5.92	6.36	7.37	8.57	9.69	10.49
500	0.81	1.24	1.53	2.06	2.56	2.78	2.97	3.21	3.40	4.45	4.79	6.17	6.89	7.36	8.35	9.70	10.84	11.66
1000	0.89	1.35	1.68	2.26	2.79	3.04	3.28	3.52	3.69	4.88	5.25	6.87	7.68	8.17	9.10	10.57	11.71	12.53

Text version of table

* These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval. Please refer to the documentation for more information. NOTE: Formatting forces estimates near zero to appear as zero.

MESA PROVING GROUNDS ONSITE PRECIPITATION DEPTHS


Partial duration based Point Precipitation Frequency Estimates Version: 4
33.3325 N 111.62 W 1420 ft
Precipitation Depth (in)
0 1 2 3 4 5 6 7 8 9 10 11 12 13
1 2 3 4 5 6 7 8 9 10 20 30 40 50 80 100 140 200 300 500 700 1000
Average Recurrence Interval (years)
Mon Oct 22 10:08:42 2007
Duration
5-min
10-min
15-min
30-min
60-min
2-hr
3-hr
6-hr
12-hr
24-hr
48-hr
4-day
7-day
10-day
20-day
30-day
60-day



Confidence Limits -

* Upper bound of the 90% confidence interval Precipitation Frequency Estimates (inches)																		
ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.23	0.35	0.44	0.59	0.73	0.82	0.89	1.03	1.14	1.36	1.42	1.62	1.79	1.95	2.42	2.81	3.29	3.65
2	0.30	0.46	0.57	0.77	0.96	1.06	1.14	1.31	1.44	1.72	1.81	2.07	2.28	2.48	3.10	3.60	4.22	4.70
5	0.41	0.62	0.77	1.04	1.29	1.41	1.49	1.67	1.81	2.19	2.33	2.70	2.99	3.25	4.05	4.70	5.51	6.12
10	0.49	0.75	0.93	1.25	1.54	1.68	1.76	1.95	2.10	2.57	2.74	3.22	3.57	3.86	4.79	5.54	6.48	7.16
25	0.60	0.91	1.13	1.52	1.88	2.04	2.14	2.33	2.49	3.09	3.30	3.94	4.38	4.73	5.77	6.68	7.75	8.52
50	0.68	1.04	1.29	1.74	2.15	2.32	2.44	2.63	2.79	3.50	3.75	4.54	5.05	5.43	6.54	7.56	8.71	9.53
100	0.77	1.17	1.45	1.95	2.42	2.61	2.76	2.95	3.11	3.93	4.22	5.18	5.76	6.18	7.33	8.48	9.69	10.55
200	0.86	1.30	1.61	2.17	2.69	2.90	3.09	3.28	3.43	4.38	4.71	5.86	6.53	6.97	8.13	9.41	10.67	11.55
500	0.98	1.49	1.84	2.48	3.07	3.30	3.56	3.74	3.88	5.01	5.40	6.83	7.62	8.11	9.24	10.69	11.98	12.88
1000	1.07	1.63	2.02	2.72	3.36	3.63	3.94	4.11	4.24	5.53	5.95	7.63	8.53	9.02	10.11	11.71	12.99	13.88

* The upper bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are greater than.
** These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval.
Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

* Lower bound of the 90% confidence interval

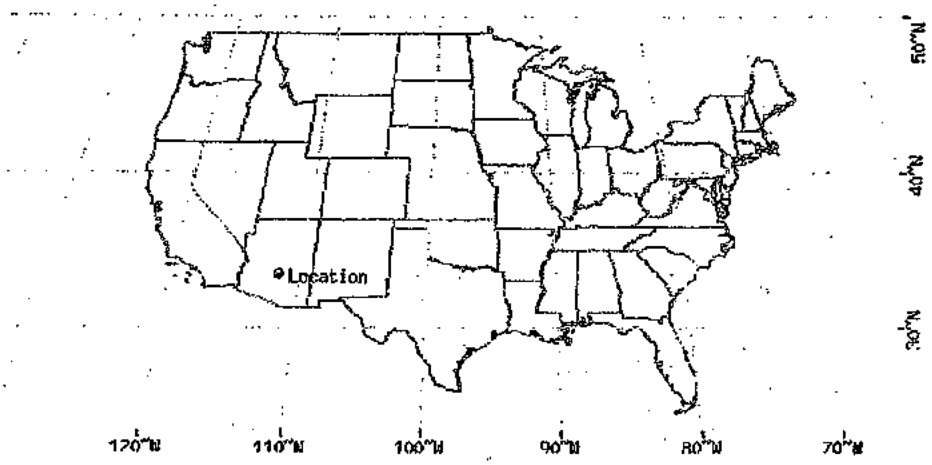
Precipitation Frequency Estimates (inches)

ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.16	0.24	0.30	0.41	0.50	0.58	0.61	0.76	0.87	1.08	1.14	1.34	1.48	1.61	1.99	2.33	2.72	3.04
2	0.21	0.32	0.40	0.53	0.66	0.75	0.79	0.96	1.10	1.37	1.44	1.70	1.88	2.06	2.55	2.98	3.49	3.90
5	0.28	0.43	0.53	0.71	0.88	0.99	1.03	1.22	1.39	1.74	1.86	2.22	2.46	2.69	3.34	3.90	4.56	5.08
10	0.34	0.51	0.63	0.85	1.05	1.17	1.21	1.42	1.60	2.04	2.18	2.64	2.93	3.19	3.93	4.60	5.35	5.93
25	0.41	0.62	0.76	1.03	1.27	1.41	1.46	1.69	1.88	2.43	2.61	3.23	3.58	3.90	4.73	5.52	6.38	7.03
50	0.46	0.70	0.86	1.16	1.44	1.58	1.64	1.88	2.09	2.73	2.94	3.69	4.10	4.44	5.33	6.22	7.14	7.83
100	0.51	0.77	0.96	1.29	1.59	1.75	1.82	2.07	2.29	3.04	3.27	4.17	4.64	5.01	5.94	6.93	7.90	8.62
200	0.56	0.84	1.05	1.41	1.75	1.91	2.01	2.26	2.49	3.34	3.60	4.66	5.20	5.60	6.54	7.63	8.63	9.38
500	0.62	0.94	1.16	1.57	1.94	2.12	2.25	2.51	2.73	3.74	4.03	5.34	5.96	6.40	7.33	8.55	9.58	10.35
1000	0.66	1.00	1.25	1.68	2.08	2.27	2.42	2.68	2.92	4.04	4.35	5.88	6.57	7.03	7.92	9.23	10.28	11.05

* The lower bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are less than.
** These precipitation frequency estimates are based on a partial duration maxima series. ARI is the Average Recurrence Interval.

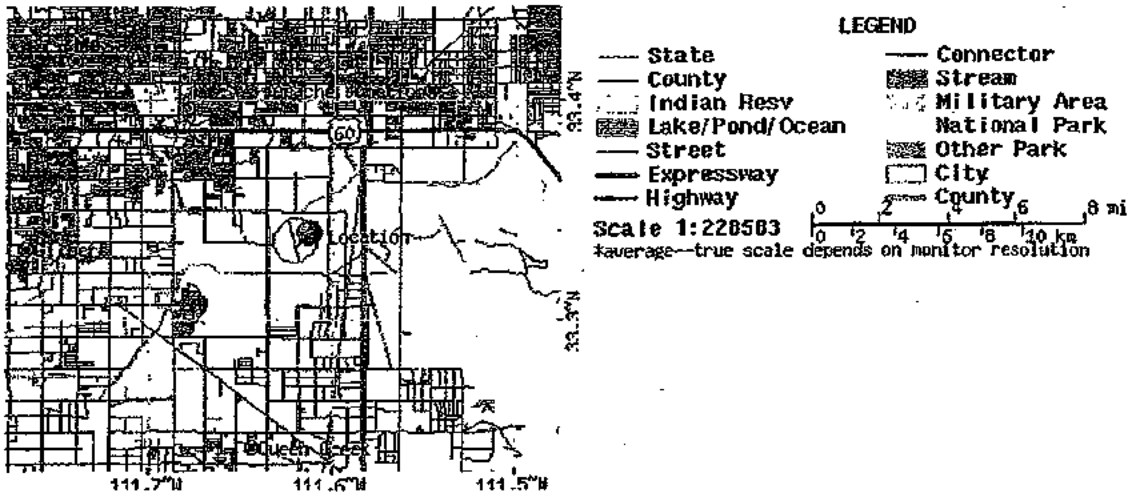
Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

Maps -



These maps were produced using a direct map request from the U.S. Census Bureau Mapping and Cartographic Resources Tiger Map Server.

Please read disclaimer for more information.



Other Maps/Photographs -

View USGS digital orthophoto quadrangle (DOQ) covering this location from TerraServer; USGS Aerial Photograph may also be available
from this site. A DOQ is a computer-generated image of an aerial photograph in which image displacement caused by terrain relief and camera tilts has been removed. It combines the image characteristics of a photograph with the geometric qualities of a map. Visit the USGS for more information.

Watershed/Stream Flow Information -

Find the Watershed for this location using the U.S. Environmental Protection Agency's site.

Climate Data Sources -

Precipitation frequency results are based on data from a variety of sources, but largely NCDC. The following links provide general information
about observing sites in the area, regardless of if their data was used in this study. For detailed information about the stations used in this study,
please refer to our documentation.

Using the National Climatic Data Center's (NCDC) station search engine, locate other climate stations within:

+/-30 minutes ...OR... +/-1 degree of this location (33.3325/-111.62). Digital ASCII data can be obtained directly from NCDC.

Find Natural Resources Conservation Service (NRCS) SNOTEL (SNOwpack TELemetry) stations by visiting the Western Regional Climate Center's state-specific SNOTEL station maps.

Hydrometeorological Design Studies Center
DOC/NOAA/National Weather Service
1325 East-West Highway
Silver Spring, MD 20910
(301) 713-1669
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Proposed Condition HEC-1 Sub-Basin Data

Table 1 - Post Developed HEC-1 Sub-Basin Data

Description: Sub-basin data based on aerial photo and proposed topography

Location Development Units 8 & 9 - Eastmark - East Mesa, Arizona

Reference: DDMSW Version 4.6.0

ONSITE BASINS										
Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	Length +10%	USGE (ft)	DSGE (ft)	Lca (ft)	Lca (mi)
16	2,949,384	67.71	0.106	2134	0.40	0.44	1425.0	1410.0	1100	0.21
18	8,921,616	204.81	0.320	3445	0.65	0.72	1435.0	1420.0	1761	0.33
19	2,856,235	65.57	0.102	2394	0.45	0.50	1420.0	1410.0	1082	0.20
20	8,518,170	195.55	0.306	4890	0.93	1.02	1430.0	1412.0	2361	0.45
Totals	**23,245,405**	**533.64**	**0.834**							

Proposed Condition HEC-1 Soil Data

Table 2 - Post Developed HEC-1 - Soils Data

Description: Post Developed Soil Data

Location Development Units 8 & 9 - Eastmark - East Mesa, Arizona

Reference: NRCS Web Soil Survey
Aguila-Carefree Area Soil Survey

Sub-Basin ID	Soil ID	Soil Type	Area (acres)	Area (sq. mi.)
16	2	Antho Gravelly Sandy Loams	11.65	0.018
	78	ohall Clay Loam, Calcareous Solum	40.65	0.064
	112	Tremant Gravelly Sandy Loams	15.17	0.024
		TOTAL	**67.47**	**0.106**
18	1	Antho Sandy Loams	4.81	0.008
	2	Antho Gravelly Sandy Loams	20.65	0.032
	50	Estrella Loams	79.46	0.124
	77	Mohall Clay Loam	28.64	0.045
	78	ohall Clay Loam, Calcareous Solum	47.58	0.074
	112	Tremant Gravelly Sandy Loams	13.37	0.021
	115	remant-Antho Complex, 1-5 %Slope	10.88	0.017
		TOTAL	**205.39**	**0.321**
19	50	Estrella Loams	4.27	0.007
	77	Mohall Clay Loam	22.59	0.035
	78	Mohall Clay Loam, Calcareous Solum	38.32	0.060
		TOTAL	**65.18**	**0.102**
20	22	Contine Clay Loam	118.37	0.185
	77	Mohall Clay Loam	27.87	0.044
	78	ohall Clay Loam, Calcareous Solum	0.27	0.000
	112	Tremant Gravelly Sandy Loams	49.30	0.077
		TOTAL	**195.81**	**0.306**

Proposed Condition HEC-1 Land Use Data

Table 3 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Development Units 8 & 9 - Eastmark - East Mesa, Arizona

Reference: DDMSW Version 4.6.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
16	2949384	67.7	0.1058	DU3	5.7	Medium Lot Residential (2-4 DU/Acre)	248292	5.7	0.0089	0.045
				DU8	62.0	Medium Lot Residential (2-4 DU/Acre)	2117388	48.6	0.0759	0.040
						Active Open Space	291852	6.7	0.0105	0.050
						General Transportation	291852	6.7	0.0105	0.030
18	8921616	204.8	0.3200	DU8	204.8	Medium Lot Residential (2-4 DU/Acre)	6691213	153.6	0.2400	0.040
						Active Open Space	1338242	30.7	0.0480	0.050
						General Transportation	892161	20.5	0.0320	0.030
19	2856235	65.6	0.1025	DU8	65.6	Medium Lot Residential (2-4 DU/Acre)	1999365	45.9	0.0717	0.040
						Active Open Space	571247	13.1	0.0205	0.050
						General Transportation	285624	6.6	0.0103	0.030
20	8518170	195.6	0.3056	DU9	195.6	Medium Lot Residential (2-4 DU/Acre)	6388628	146.7	0.2292	0.040
						Active Open Space	1277726	29.3	0.0458	0.050
						General Transportation	851817	19.6	0.0306	0.030

Proposed Condition HEC-1 Routing Data

Table 4 - Post Developed HEC-1 Routing Data

Description: Routing parameters based on proposed channels and drainage corridors

Location Development Units 8 & 9 - Eastmark - East Mesa, Arizona

Reference: DDMSW Version 4.6.0

Routing ID	Routing Method	LOB N	CHAN N	ROB N	Length (ft)	Slope (ft/ft)	RX1	RX2	LB	RX4	RX5	RB	RX7	RX8	RY1	RY2	LB	RY4	RY5	RB	RY7	RY8
88T19	Normal Depth	0.013	0.013	0.013	1150	0.0020	0.0	15.0	17.0	36.0	112.0	130.0	132.0	146.0	4.00	0.00	0.00	3.00	3.00	0.00	0.00	4.00
77ATB	Normal Depth	0.045	0.040	0.045	3000	0.0050	0.0	5.0	10.0	37.0	47.0	74.0	79.0	84.0	5.50	5.00	4.50	0.00	0.00	4.50	5.00	5.50
77BTC	Normal Depth	0.045	0.040	0.045	4750	0.0042	0.0	5.0	10.0	20.0	85.0	105.0	110.0	115.0	5.00	4.00	3.00	0.00	0.00	3.00	4.00	5.00
77CT79	Normal Depth	0.032	0.032	0.032	4435	0.0020	0.0	5.0	10.0	24.0	124.0	138.0	143.0	148.0	4.50	4.00	3.50	0.00	0.00	3.50	4.00	4.50
78ATB	Normal Depth	0.045	0.040	0.045	3500	0.0042	0.0	500.0	980.0	1003.0	1007.0	1031.0	1511.0	2011.0	4.50	3.50	3.00	0.00	0.00	3.00	3.50	4.50
78BTC	Normal Depth	0.035	0.022	0.035	4500	0.0033	0.0	100.0	110.0	115.0	120.0	125.0	130.0	135.0	5.00	4.00	3.50	0.00	0.00	3.50	9.00	9.00
78CT79	Normal Depth	0.032	0.032	0.032	4215	0.0033	0.0	5.0	10.0	26.0	81.0	97.0	102.0	107.0	5.00	4.50	4.00	0.00	0.00	4.00	4.50	5.00

Proposed Condition Onsite Retention Volume Summary

Table 5 - Onsite Retention Volume Summary

Description: Calculation of Required Retention Volume Using the Rational Method

Location Eastmark

Reference: Drainage Design Manual for Maricopa County, Vol. I, Hydrology

Known Values: Design storm: 100-yr, 2-hr
Rainfall, D: 2.19 inches

Calc. Values: V = DAC
Where: V = Retention Volume Required
D = Depth of Rainfall (ft)
A = Area of Watershed Contributing
C = Runoff Coefficient

Retention - 100YR, 2HR Volumes (South of the Powerline Floodway)

Retention Basin	Retention Location	Sub-basin		Development Unit		Weighted "C_{100}"	100YR - 2HR Volume Required (acre-feet)	Total 100YR - 2HR Volume Required (acre-feet)
		Contributing Sub-basin	Contributing Sub-basin Area (acres)	Contributing DUs	DU Area Within Sub-basin (acres)			
RET16	DU-3	16	67.70	DU-3	5.70	0.65	0.7	8.4
	DU-8			DU-8	62.00	0.68	7.7	
RET18	DU-8	18	204.80	DU-8	204.80	0.68	25.4	25.4
RET19	DU-8	19	65.60	DU-8	65.60	0.68	8.1	8.1
RET20	DU-9	20	195.60	DU-9	195.60	0.68	24.3	24.3
							Total	**66.2** ac-ft

APPENDIX B

Existing and Preliminary Channel Calculations

Worksheet for 77CT78B - Ray to Galveston

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00240	ft/ft
Left Side Slope	6.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	32.00	ft
Discharge	510.00	ft^3/s

Results

Normal Depth	2.91	ft
Flow Area	131.37	ft^2
Wetted Perimeter	58.93	ft
Hydraulic Radius	2.23	ft
Top Width	58.21	ft
Critical Depth	1.82	ft
Critical Slope	0.01316	ft/ft
Velocity	3.88	ft/s
Velocity Head	0.23	ft
Specific Energy	3.15	ft
Froude Number	0.46	
Flow Type	Subcritical	

PROPOSED CHANNEL DEPTH = 4 ft FREEBOARD = 1 ft

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.91	ft
Critical Depth	1.82	ft
Channel Slope	0.00240	ft/ft

Cross Section for 77CT78B - Ray to Galveston

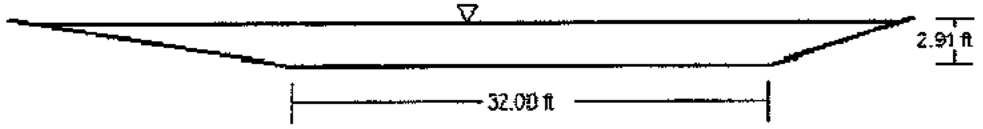
Project Description

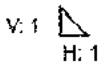
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00240	ft/ft
Normal Depth	2.91	ft
Left Side Slope	6.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	32.00	ft
Discharge	510.00	ft³/s

Cross Section Image





Worksheet for 77CT78B - Galveston to Williamsfield

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00190	ft/ft
Left Side Slope	6.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	70.00	ft
Discharge	946.00	ft³/s

Results

Normal Depth	2.99	ft
Flow Area	249.87	ft²
Wetted Perimeter	97.68	ft
Hydraulic Radius	2.56	ft
Top Width	96.94	ft
Critical Depth	1.72	ft
Critical Slope	0.01295	ft/ft
Velocity	3.79	ft/s
Velocity Head	0.22	ft
Specific Energy	3.22	ft
Froude Number	0.42	
Flow Type	Subcritical	

PROPOSED CHANNEL DEPTH = 4 ft

FREEBOARD = 1 ft

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.99	ft
Critical Depth	1.72	ft
Channel Slope	0.00190	ft/ft

Worksheet for 77CT78B - Galveston to Williamsfield

CVF Output Data

Critical Slope	0.01295	ft/ft

Messages

Notes

From Galveston Street to Williams Field Road

Cross Section for 77CT78B - Galveston to Williamsfield

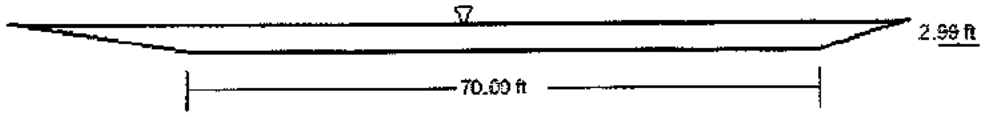
Project Description

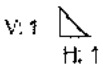
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00190	ft/ft
Normal Depth	2.99	ft
Left Side Slope	6.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	70.00	ft
Discharge	946.00	ft³/s

Cross Section Image





WILLIAMSFIELD CHANNEL
SIGNAL BUTTE TO PACIFIC PROVING GROUNDS

Worksheet for 78CT79

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00330	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	6.00	ft/ft (H:V)
Bottom Width	51.00	ft
Discharge	946.00	ft³/s

Results

Normal Depth	3.01	ft
Flow Area	194.33	ft²
Wetted Perimeter	78.83	ft
Hydraulic Radius	2.47	ft
Top Width	78.10	ft
Critical Depth	2.07	ft
Critical Slope	0.01241	ft/ft
Velocity	4.87	ft/s
Velocity Head	0.37	ft
Specific Energy	3.38	ft
Froude Number	0.54	
Flow Type	Subcritical	

PROPOSED CHANNEL
DEPTH = 4 FT
FREEBOARD = 1 FT

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.01	ft
Critical Depth	2.07	ft
Channel Slope	0.00330	ft/ft

Worksheet for 78CT79

GVF Output Data

Critical Slope	0.01241	ft/ft

Cross Section for 78CT79

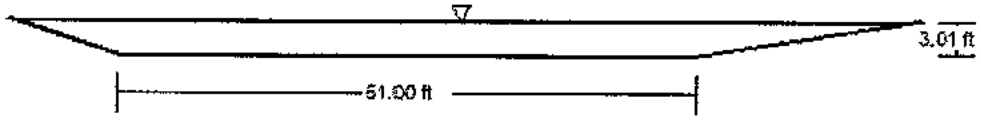
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.032	
Channel Slope	0.00330	ft/ft
Normal Depth	3.01	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	6.00	ft/ft (H:V)
Bottom Width	51.00	ft
Discharge	946.00	ft³/s

Cross Section Image



V: 1
H: 1

PLATE 1

Vicinity Map

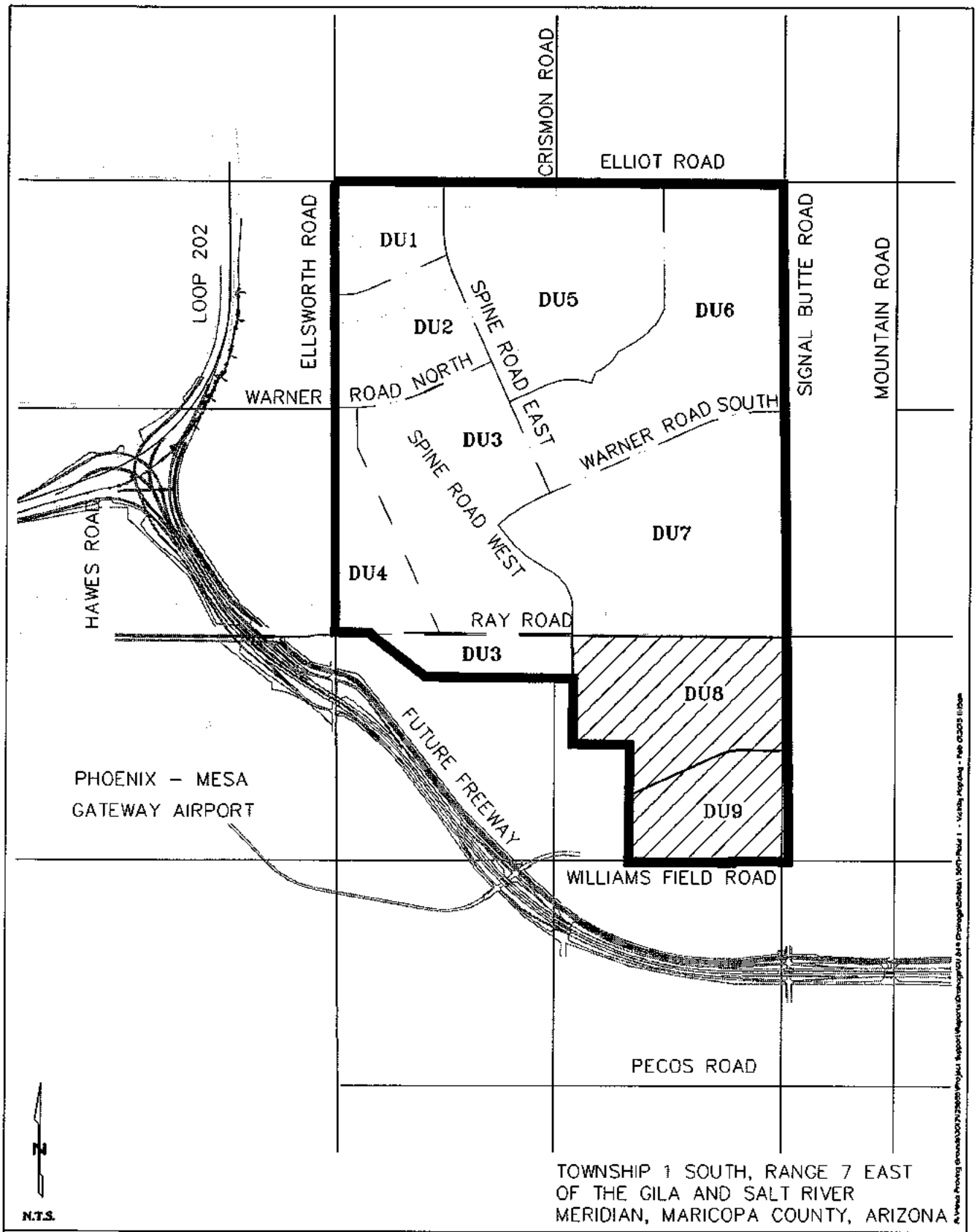


PLATE 1: VICINITY MAP

EASTMARK - DEVELOPMENT UNITS 8 & 9
MESA, ARIZONA
FEBRUARY 1, 2013

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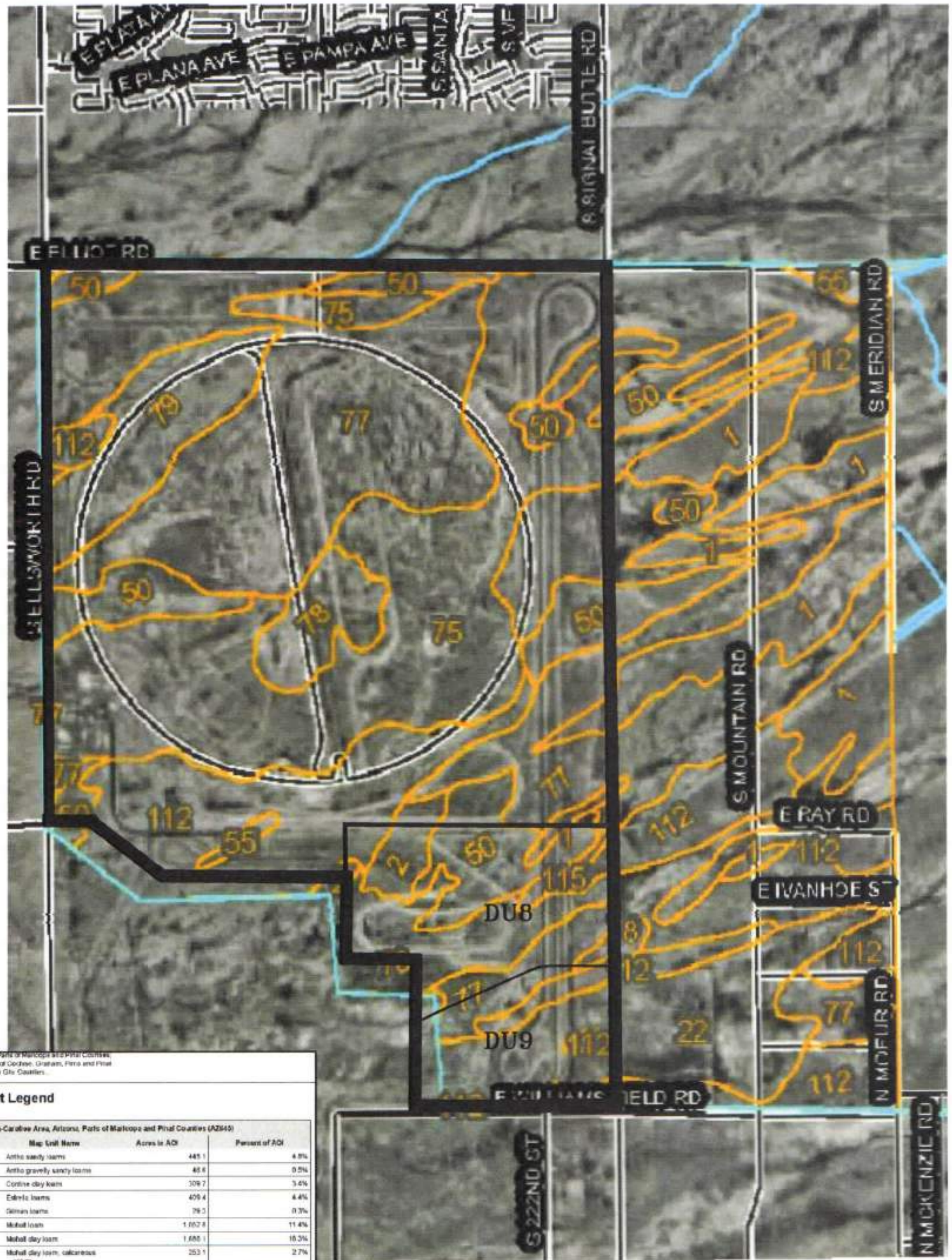
PLATE 2

Soils Map



Soil Map–Aguila-Carefree Area, Arizona, Parts of Maricopa and Pinal Counties; Coronado National Forest, Arizona, Parts of Cochise, Graham, Pima and Pinal Counties; and Eastern Pinal and Southern Gila Counties

Map Unit Legend

Aguila-Carefree Area, Arizona, Parts of Maricopa and Pinal Counties (AZ645)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Antho sandy loams	445.1	4.8%
2	Antho gravelly sandy loams	46.6	0.5%
22	Contine clay loam	309.7	3.4%
50	Estrella loams	409.4	4.4%
55	Gilman loams	29.3	0.3%
75	Mohall loam	1,052.8	11.4%
77	Mohall clay loam	1,688.1	18.3%
78	Mohall clay loam, calcareous solum	253.1	2.7%
79	Mohall clay	175.4	1.9%
112	Tremant gravelly sandy loams	771.5	8.4%
115	Tremant-Antho complex, 1 to 5 percent slopes	13.2	0.1%
Coronado National Forest, Arizona, Parts of Cochise, Graham, Pima and Pinal Counties (AZ723)			
No soil data available for this soil survey area.			
Eastern Pinal and Southern Gila Counties, Arizona (AZ661)			
No map units selected for this soil survey area.			
Totals for Area of Interest (AOI)		9,214.9	100.0%

3000 0 1500 3000

1 inch = 3000ft.

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PLATE 2: SOILS MAP

EASTMARK - DEVELOPMENT UNITS 8 & 9
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FEBRUARY 1, 2013

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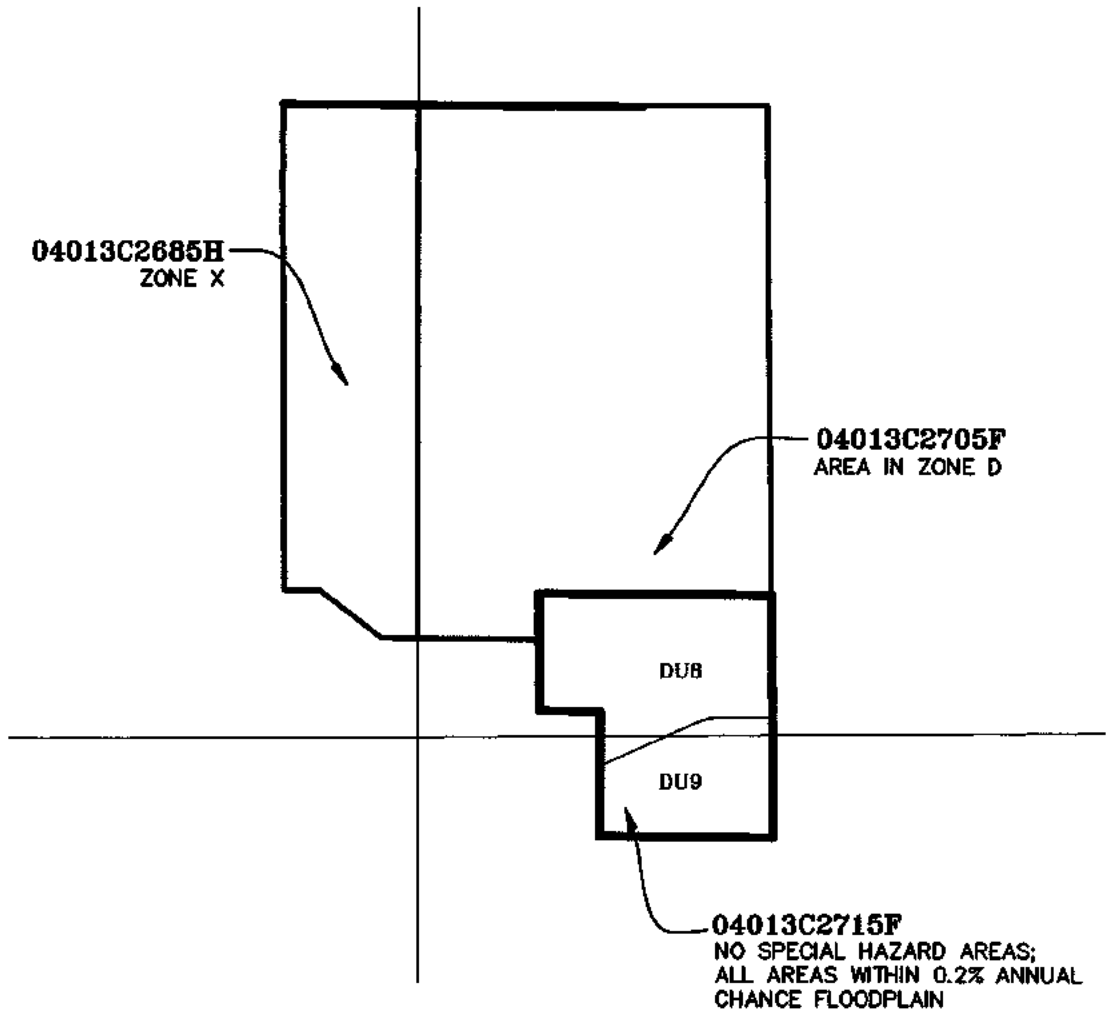
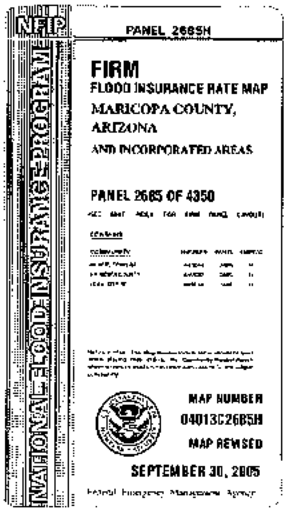
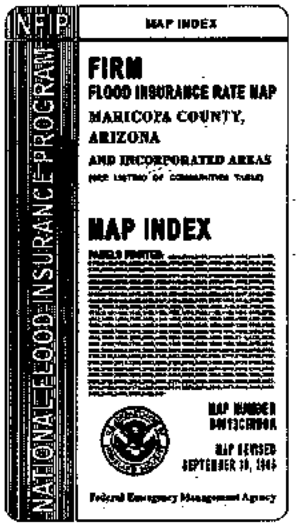
PLATE 3

Flood Insurance Rate Map

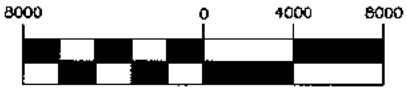






Zone "X" is defined by FEMA as follows:
Areas of 0.2% annual chance flood: areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Zone "D" is defined by FEMA as follows:
Areas in which flood hazards are undetermined.



1 inch = 8000ft.

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PLATE 3: FEMA FIRM MAP

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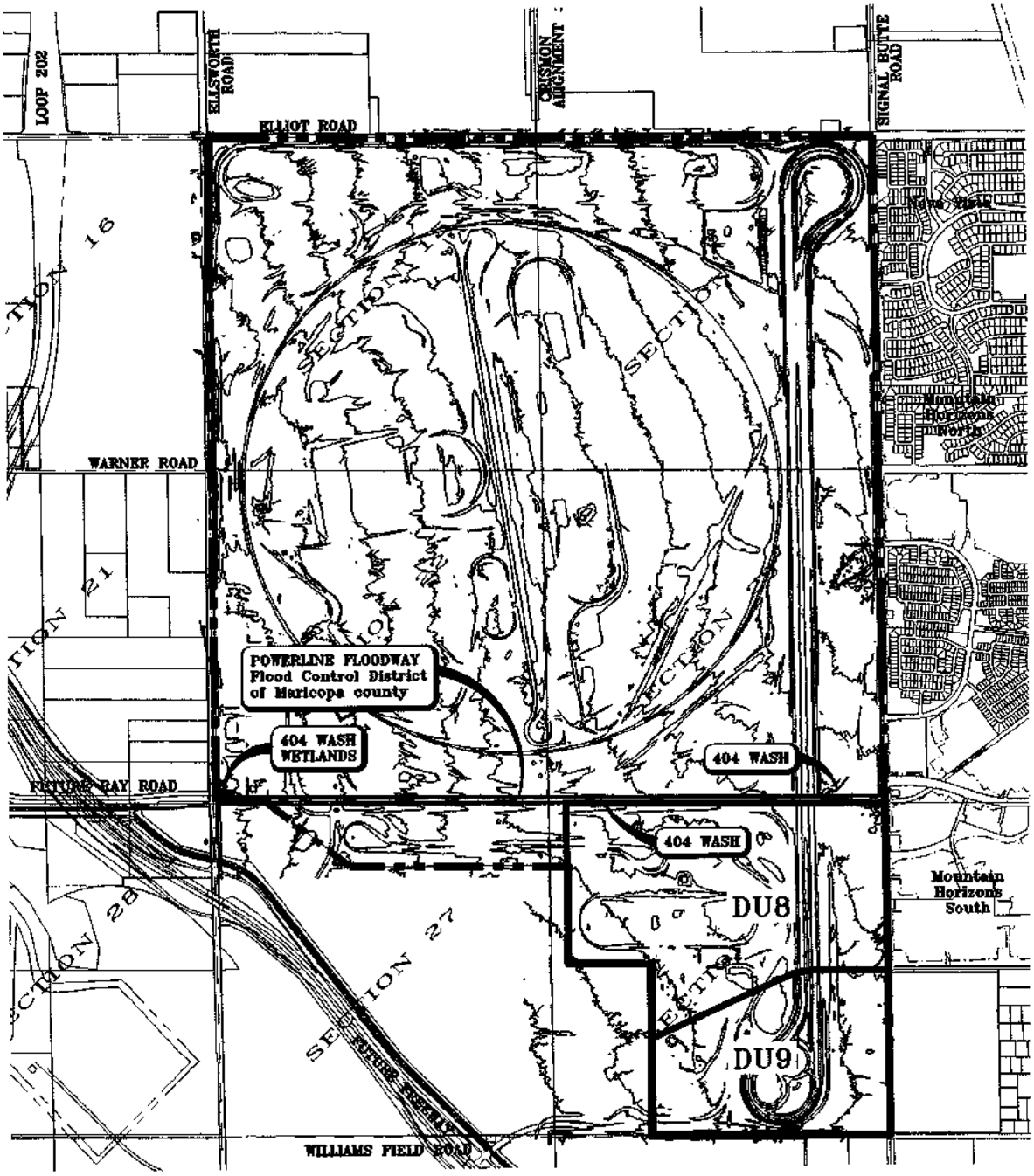
PLATE 4

Section 404 Jurisdictional Delineation Map



LEGEND

- 404 WASH
- 404 WASH WETLANDS
- PROPERTY BOUNDARY
- 5 FT. CONTOUR 1430

N

N.T.S.

PLATE 4: 404 JURISDICTIONAL DELINEATION MAP

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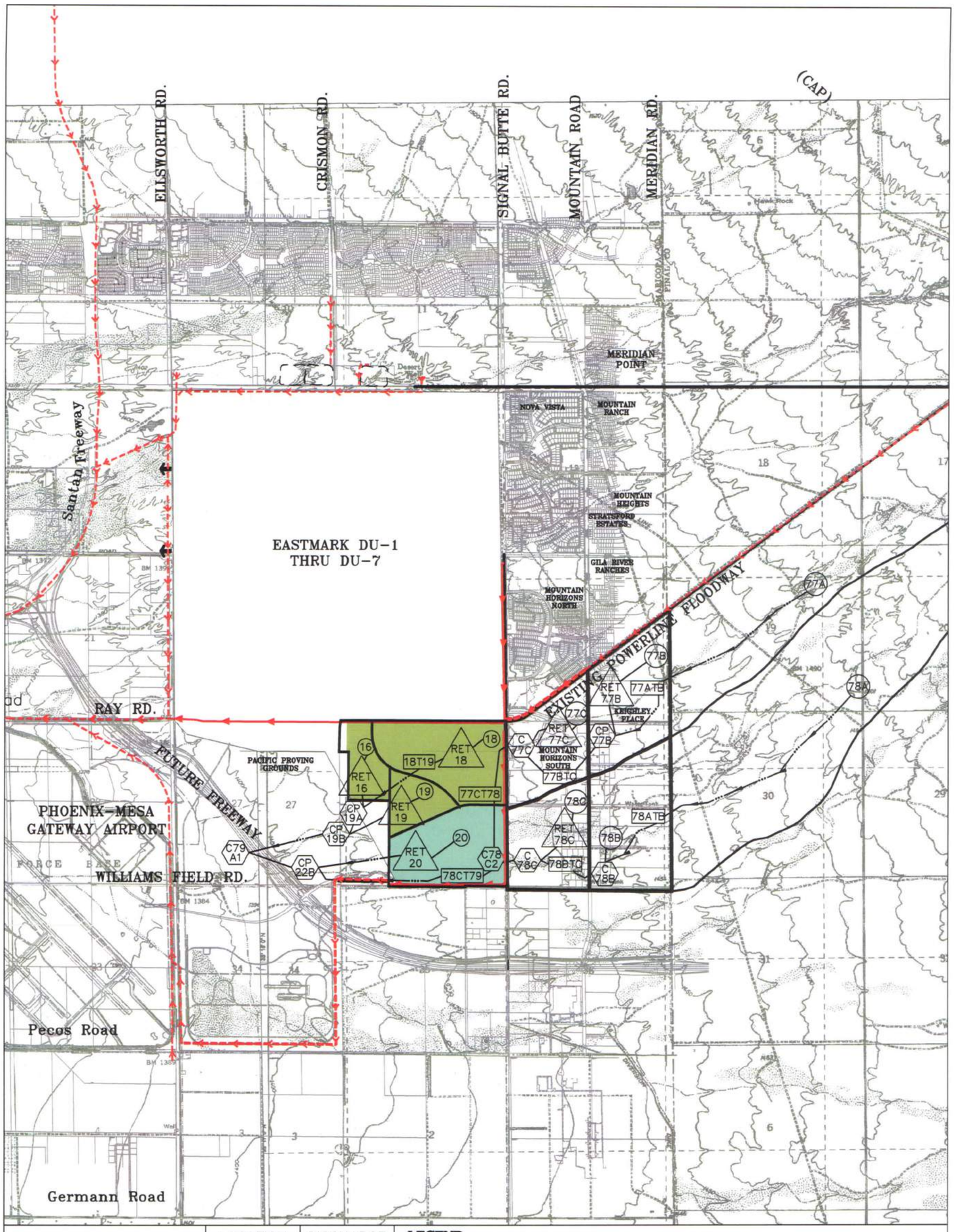
PLATE 5

Post-Developed HEC-1 Schematic



LOCATION ID	DISCHARGE (CFS)
CP19A	58
CP19B	126
CP22B	939
C79A1	1093

3000 0 1500 3000

Horz. 1 in. = 3000 ft.

LEGEND

- SUB-BASIN BOUNDARY
- EXISTING STORM DRAIN
- PROPOSED CHANNEL AND/OR STORM DRAIN SYSTEM
- EXISTING CHANNEL OR STORM DRAIN
- ROUTING
- 5 FT. CONTOUR
- FLOW DIRECTION ARROW

- DU-8
- DU-9
- 77C — WATERSHED ID
- 77BTC — ROUTING ID
- C 77C — CONCENTRATION POINT ID
- RET 73B — RETENTION ID

PLATE 5: POST DEVELOPED HEC-1 SCHEMATIC - SHEET 1

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MARICOPA COUNTY, ARIZONA
FEBRUARY 1, 2013

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