MASTER DRAINAGE REPORT UPDATE
FOR
EASTMARK

Revised March 5, 2021
Revised December 9, 2019
Revised October 3, 2017
Revised April 24, 2017
Revised April 24, 2014
Revised April 15, 2014
Revised December 16, 2013
Revised February 4, 2013
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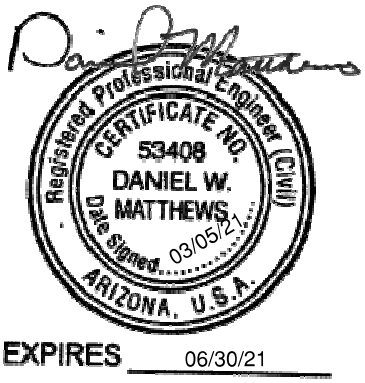

EXPIRES 06/30/21

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EASTMARK

DATE 03/09/2021

Christina Renee Christian - Senior Development Manager

Drainage Master Report Update March 2021

mesa·az

DEVELOPMENT SERVICES
REVIEWED FOR CODE
COMPLIANCE
DATE 12/16/2021 RAP

APPROVED

WOOD/PATEL
MISSION: CLIENT SERVICE®

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EXECUTIVE SUMMARY

This report supersedes the approved *Master Drainage Report for Eastmark*, dated December 9, 2019, and has been prepared to specifically address revisions to the land uses within Development Units 1 (DU 1), 2 (DU 2), 5 West (DU 5W), 3/4 (DU 3/4), 6 North (DU 6N), and 6 South (DU 6S), and other updates within several Development Units. More detailed land use planning within DU 1-2-5W, DU 6N, and DU 6S has been provided to Wood, Patel & Associates, Inc. (WOODPATEL) by DMB Mesa Proving Grounds, LLC. Portions of DU 3/4 have already been constructed or are in the process of construction. The next phase of development within Eastmark is planned to include the Commercial Core located at the northeast corner of Ray Road and Ellsworth Road, DU 1, DU 2, DU 5W, and residential parcels in DU 6S.

Changes to the *Master Drainage Report Update for Eastmark* include:

- Development Unit 5 North (DU 5N) was separated into East and West portions to delineate planned development parcels.
- Revised boundary of DU 6N and DU 6S. DU 6N decreased to approximately 208 acres, while DU 6S increased to approximately 475 acres.
- Combined boundary of DU 1, DU 2, and DU 5W, which is now called DU 1-2-5W. This area is planned as a single property.
- Revised DU 1-2-5W, Development Unit 5 East (DU 5E), DU 6N, and DU 6S land uses, boundaries, and naming convention to reflect more detailed planning of parcel boundaries, based on potential end users.
- Revised land uses within DU 3/4 and DU 6S, to reflect more detailed planning.
- Revised offsite land uses and retention for Sub-basin 78C to reflect recent site grading and recorded final plats, specifically from the La Mira development.
- Revised Post-Developed Condition Hydrology including updates to reflect recently constructed and future planned retention.
- Adjusted Sub-basins 8 and 10 to reflect the as-built condition.

Refer to Exhibit 1 – *Vicinity Map*.

1.0 INTRODUCTION

1.1 General Background and Project Location

The proposed Eastmark development (formerly known as Mesa Proving Grounds) is an approximate 3,154-acre master planned community being developed in the City of Mesa (City). It is a Planned Community District (PCD) which is a mixed-use development that will include single-family residential, multi-family residential, urban mixed-use, commercial mixed-use, office, industrial, hotel, resort, various community uses, and open spaces. This *Master Drainage Report for Eastmark* utilizes planning and as-built plans provided by DMB Mesa Proving Grounds, LLC and the City of Mesa to model drainage throughout the Site.

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

The Site is located within Sections 14, 15, 22, 23, 26, and 27, Township 1 South, Range 7 East of the Gila and Salt River Meridian. The Site is bounded by Elliot Road to the north, Williams Field Road and Cadence (formerly Pacific Proving Grounds) on the south, Ellsworth Road to the west, and Signal Butte Road to the east (refer to Exhibit 1).

The pre-developed Site consisted of multiple automotive test tracks and undisturbed desert used by General Motors. Portions of the Site have been developed into industrial land uses, including the Apple industrial building at the southwest corner of Elliot Road and Signal Butte Road and the Edge Core data center located on the west side of Everton Terrace at the south end of DU 5E. Existing single-family residential, commercial, school, and community uses are also located within Development Units 3S, 3/4, 6S, 7, 8, and 9. Portions of the planned development units are constructed or under construction.

The majority of the Site is surrounded by undeveloped desert along the northern and western boundaries. Along the eastern boundary, the Site is bordered by two (2) existing residential developments, Nova Vista and Bella Via (formerly known as Mountain Horizons) and a future development along the southern edge called La Mira. Grading of La Mira has been completed, and residential units will be built in 2021. Along the western portion of the southern boundary, the initial phases of Cadence have been constructed. Along the eastern portion of the southern boundary, the proposed

development Destination of Gateway has been planned but not constructed, and additional undeveloped land remains.

In addition, the Powerline Floodway Channel bisects the Site along the Ray Road alignment. This is a major FCDMC facility that provides conveyance of discharge from the FCDMC Flood Retarding Structures, approximately three miles east of the Site, and drainage conveyance for storm water 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 Master Drainage Report

The Master Drainage Report was prepared to support the proposed development at Eastmark. 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 storm water runoff for the development of Eastmark.

The Site is planned as a PCD. In accordance with the PCD, the total square footage of non-residential, and total number of residential dwelling units developed within the Site, may be less than contemplated in this report. Also, the actual location of land uses may be different than contemplated in this report within the undeveloped areas of the Site. There are ten (10) development units that comprise the PCD that have been realigned to nine (9) units within this Master Plan update. Within each development unit are low-and high-density ranges for development. Regardless of the land use, the required retention volume will be predicated on the final land use consistent with the drainage design requirements for the City of Mesa, and meeting existing-condition peak flows and runoff volumes leaving the Site.

Due to the flexible nature of the Community Zoning, the land uses have varied significantly from initial planning to final plat, therefore regular Master Plan updates have been prepared to account for the most current construction and planning. Additionally, sizing of onsite drainage infrastructure such as channels and storm drain would vary greatly with different land uses and roadway layouts. Therefore, it is not feasible to accurately model storm drain, and consequently, is not included. The needed layout and sizing of such systems will be determined and designed by the Engineer preparing construction documents and Final Drainage Reports, and will follow routing contemplated within this report.

A more detailed analysis of the drainage system for each development unit was previously provided with each Development Unit Master Drainage Report. Each Development Unit Master Drainage Report addressed the interim condition, including developed, undeveloped, and current Development Unit planning that followed current proposed construction phasing within Eastmark. This report has been updated to include the revised land use planning for DU 1-2-5W, DU 5E, DU 6N, and DU 6S, with minor adjustments to land uses for the as-built remainder of the Site. Updates to the Master Drainage Report may be required if future significant changes are made to the land uses and assumptions utilized to prepare this report.

1.3 Development Unit Master Plan Approvals

As each development unit is planned, this *Master Drainage Report for Eastmark* shall be updated as a living document to reflect changes to the land use plan that would affect the full build-out drainage system. Each development unit shall be master planned, utilizing current approved criteria which accurately reflects drainage conditions on a master planned level for the entire community. The approvals of development unit drainage master plans and corresponding criteria are as follows:

- DU 7 – Approved report dated December 20, 2011 with 2009 City of Mesa drainage criteria.
- DU 8 and 9 – Approved report dated February 4, 2013 with 2009 City of Mesa drainage criteria.
- DU 3S – Approved report dated December 16, 2013 with 2009 City of Mesa drainage criteria.
- DU 5, DU 5N, and DU 6S – Approved report dated April 26, 2017 with 2012 City of Mesa drainage criteria.
- DU 3/4 – Approved report dated December 9, 2019 with 2019 City of Mesa drainage criteria. Since the construction of DU 1-2-5W completes the drainage infrastructure in the northwest site corner, there is no longer an interim condition for DU 2; therefore, an update to the DU 2 Master Plan in unnecessary.
- DU 2 – Approved report dated December 9, 2019 with 2019 City of Mesa drainage criteria. The construction of DU 1-2-5W completes the drainage infrastructure in the northwest site corner therefore DU 2 no longer has an interim drainage condition and revisions to the DU 2 Master Report are not necessary.

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. Refer to Exhibit 2 – *Soils Map*, and Appendices A and B 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 with 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 04013C2760L, dated October 16, 2013, indicates that the western edge of the Site, approximately 800 acres, is within Zone "X" Shaded.

Zone "X" Shaded 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."*

Panel Number 04013C2760L also indicates area beyond the eastern map boundary is within Zone "D". The FEMA website indicates this area is within the Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) Panel Number 04013C2780L. The FEMA website shows the panel as not printed, and does not indicate a flood zone designation. Based on the Zone "D" markings on Panel Number 04013C2760L, and previously-mapped Panel Number 04013CIND0A, dated September 30, 2005, portions of Eastmark within Panel Number 04013C2780L, approximately 2,160 acres is believed to be within a FEMA Zone "D".

Zone "D" is defined by FEMA as follows:

"Areas in which flood hazards are undetermined."

The remaining southern-most portion of Eastmark, approximately 190 acres, is located within Panel Number 04013C2790L. The FEMA website shows the panel as not printed, and does not indicate a flood zone designation. The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) Panel Number 04013CIND0A dated September 30, 2005, references Panel Number 04013C2715F, which indicates that the southern-most portion of the Site is within "No special flood hazard areas". Panel Number 04013C2715F has a note that states "Panel Not Printed – No Special Flood Hazard Areas".

"No special flood hazard areas" is defined by FEMA as follows:

"All areas within 0.2% annual chance floodplain."

Refer to Exhibit 3 – *Flood Insurance Rate Map* for an illustration.

2.4 Section 404 Jurisdictional Areas

A Jurisdictional Delineation was completed by the U.S. Army Corps of Engineers (Corps) on the Site. The Powerline Floodway channel, a small wash, and a detention basin have been designated as Jurisdictional. The Powerline Floodway and wash are jurisdictional conveyance facilities, and the detention basin is considered a jurisdictional wetland. Refer to Exhibit 4 – *Section 404 Jurisdictional Delineation Map* for location of Jurisdictional Areas.

It is WOODPATEL's understanding an individual permit was obtained for disturbance to the wash and basin, and the Powerline Floodway has remained undisturbed.

2.5 East Mesa Area Drainage Master Plan

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. 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.

HEC-1 hydrologic models for the East Mesa ADMP were provided by FCDMC. The MIDCURE.DAT model, which supersedes previous HEC-1 models, was updated and utilized as the existing condition model for the *Master Drainage Report for Eastmark*. In addition, the WS4-SEM.DAT model provided by the FCDMC was updated and utilized to analyze the full build-out condition. Refer to Exhibit 8 – *East Mesa Area Drainage Master Plan Map* for regional drainage facilities.

Anticipated future studies may be conducted under the auspices of FCDMC. Results of future studies may reflect a reduction of offsite peak flows impacting existing and future drainage infrastructure within Eastmark. Peak flow evaluation for design of future facilities should consider the most current published East Mesa ADMP. It is anticipated the City of Mesa will accept relevant changes and allow for future drainage infrastructure to utilize the most current peak flow information.

2.6 Upstream Development

The upstream watershed has been mostly developed between Signal Butte Road and Meridian Road, in Maricopa County. The watershed within Pinal County is undeveloped to the FRS.

The upstream residential developments' approved drainage reports are referenced in this Report. The storm water storage and conveyance facilities were incorporated into the hydrologic models of the *Master Drainage Report for Eastmark.*

3.0 PRE-DEVELOPED DRAINAGE CONDITION

3.1 Pre-Developed Drainage

The existing slope of the Site ranges from 0.5 percent to 1 percent. The Site slopes from northeast to southwest. However some historic drainage patterns have been altered to route offsite flows around the Site and onsite flows around existing automotive test tracks. In the pre-developed condition the Site was covered with typical Sonoran Desert vegetation including mesquite trees, saguaro cactus, creosote, etc.

Berms surrounding the Site, north of the Powerline Floodway, were estimated to retain 75 percent of the storm water runoff produced onsite by the Flood Control District of Maricopa County, and have been modeled accordingly within the current 100-year, 24-hour FCDMC model. The remaining onsite storm water, approximately 261 cfs, discharged in a location near the GM buildings and into the Powerline Floodway. Onsite storm water runoff from the portion of the Site south of the Powerline Floodway discharged downstream to the undeveloped Cadence community (formerly known as Pacific Proving Grounds) through existing channels and natural washes (refer to Exhibit 5 – *Pre-Developed Condition HEC-1 Schematic*).

3.1.1 Northern Boundary

Offsite flows impacting the northern boundary are currently collected and conveyed within the Elliot detention basin and storm drain system. The majority of offsite flows are conveyed north of Elliot Road in natural washes. The washes discharge to the existing Elliot Road detention basins which discharge flows to the Elliot storm drain system. These flows are conveyed west to Ellsworth Road through a 78-inch to 114-inch diameter storm drain. Additional storm water runoff produced northeast of the Elliot Road and Ellsworth Road intersection is added to the storm drain system by a 90-inch diameter storm drain beneath Elliot Road. In the pre-developed condition, approximately 1,323 cubic feet per second (cfs) within the storm drain system is then conveyed south along Ellsworth Road through a double-barrel 102-inch diameter storm drain. Approximately 1,500 feet south of the intersection, the flow is directed southwest beneath Ellsworth Road and outfalls into a channel that crosses the Arizona State Land Department property and connects to the Loop 202 drainage channel. Ultimately, these flows discharge to the EMF.

3.1.2 Eastern Boundary

Offsite flows impacting the eastern boundary between Elliot Road and Ray Road are diverted south by existing channels, washes, and berms along the west side of Signal Butte Road. In the pre-developed condition, approximately 419 cfs impacts the Site near Warner Road from an existing double-barrel 10-foot by 3-foot box culvert from Bella Via (formerly known as Mountain Horizons). A channel along the west side of Signal Butte Road was constructed with DU 7 to convey the offsite flow south to the Powerline Floodway, south of Ray Road.

The primary function of the Powerline Floodway is to be the principal outlet for the FRS structures to the east, and secondly, to convey overland flow from the area west of the FRS to the EMF. At Signal Butte Road, the floodway is estimated to carry approximately 697 cfs during the 100-year, 24-hour storm event, based on the pre-developed condition model. These flows are conveyed within the Powerline Floodway, and combine with onsite flows from Eastmark at Ellsworth Road. The combined flow at Ray and Ellsworth Roads is estimated at approximately 661 cfs, based on the updated pre-developed condition model. At this point, runoff continues westerly, combines with the Ellsworth Road channel, and discharges to the EMF. Future analysis of the Powerline Floodway hydraulics and capacity shall include the base flow of 600 cfs in addition to the 100-year calculated peak flow at specific locations. The base flow is the outlet discharge anticipated from Powerline, Vineyard, and Rittenhouse flood retarding structures.

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

Between the Galveston Street alignment and Williams Field Road, the upstream impact is from a combination of the recently-graded La Mira property, consisting of 105 acres, and additional low-density residential area further east within the Maricopa County jurisdiction, which has an approximate peak flow of 775 cfs. The flow is collected within the existing channel and combines with additional flow through an existing box culvert along the north side of Williams Field Road. The combined flow, of approximately 947 cfs is then conveyed west within the channel along the north side of Williams Field Road and discharges to an existing channel within the Cadence community. The Cadence channel routes the flow around the property, and discharges to the Ellsworth channel. 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.

3.1.3 Western Boundary

The western boundary is not impacted by offsite flows entering the Site. As mentioned in Section 3.1.1, the Elliot Road storm drain system continues south along Ellsworth Road. Approximately 1,500 feet south of Elliot Road, the storm drain discharges into a channel on the west side of Ellsworth Road. There are other existing storm drain systems along Ellsworth Road that were constructed by Maricopa County Department of Transportation (MCDOT). One system, north of Warner Road, connects to the Elliot Road storm drain system. The second system is south of the Elliot Outfall Channel and connects to the Powerline Floodway.

3.1.4 Southern Boundary

There are no offsite impacts crossing the southern boundary along Williams Field Road. There are several discharge points to Cadence 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.

3.2 Pre-Developed Condition Hydrology

Pre-developed condition hydrology has been modeled utilizing *DDMSW Version 3.3.2*, provided by the FCDMC, and the *United States Army Corps of Engineers HEC-1, Flood Hydrograph Package, Version 4.1*, (June 1998) to determine offsite and onsite peak flows prior to the development of the Site for the 100-year, 24-hour storm event. Refer to

Exhibit 5 – *Existing Condition HEC-1 Schematic*, and Appendix A for the HEC-1 output. The MIDCURE.DAT model provided by FCDMC was updated and utilized for previous approved *Eastmark Master Drainage Reports*. This Eastmark Master Drainage Report Update does not include any revisions to the pre-developed condition hydrology.

The precipitation depth of 3.60 inches in the model was not changed. Rainfall losses were calculated using the Green and Ampt method. Parameters were taken from soil data collected using the NRCS Web Soil Survey and existing land uses. In order to remain consistent with the current FCDMC MIDCURE.DAT, the Phoenix Valley S-Graph was used to develop runoff hydrographs. Runoff hydrographs were routed using the Normal Depth Storage Routing Method. See Appendix A for data and models used to develop the pre-developed condition hydrology.

4.0 PROPOSED DRAINAGE CONDITION

4.1 Proposed Drainage Plan

The overall drainage concept for Eastmark is to route offsite flow through and around the Site within channels and storm drain systems to discharge flows at their historical location and provide retention of onsite storm water in accordance with jurisdictional requirements. Refer to Exhibit 6 – *Post-Developed HEC-1 Schematic*, and Exhibit 7 – *Post-Developed Drainage Map* for watershed delineations and locations.

Offsite flows impacting the northern and eastern boundaries will be collected within existing channels and conveyed to historic outfalls, as described in Section 3.0 of this report.

Onsite flows will be conveyed through a hierarchy of roadways and storm drain systems to onsite retention basins for storage. Retention basins are designed to retain runoff generated by the 100-year, 2-hour storm event for the majority of the Site and 100-year, 24-hour storm event for the remaining site to reduce post-developed runoff volumes and peak flows to pre-development levels. Onsite runoff in excess of these storm events will be discharged within emergency outfall drainage corridors, roadways and/or storm drain systems as provided by the final design engineering of each site and development phase. In all locations, lowest floor elevations shall be set a minimum of one foot above the emergency overflow elevation or any 100-year water surface elevation adjacent to the Site, whichever is greater.

The Site has been divided into ten (10) development units and realigned to nine (9) units within this Master Plan Update. The individual development units are highlighted and labeled on Exhibit 6 and Exhibit 7. If the density varies at the development unit stage, the hydrology will be reanalyzed in the overall Master Plan revisions. Interim drainage conditions have been analyzed within individual Development Unit Master Drainage Reports. More detailed planning for DU 1-2-5W, DU 5E, DU 6N, and DU 6S, and minor land use updates throughout the development has been incorporated within this study. With the minimal remaining undeveloped property, Development Unit Master Plans and interim-condition modeling are no longer required.

Storm water retention for the 100-year, 2-hour event will be stored locally within each individual development parcel. The reduction of peak flow and runoff volume from Eastmark discharging to the Powerline Floodway requires a portion of the site to retain the 100-year, 24-hour storm event. Watersheds 7B, 7C, and 9 are constructed or currently under construction. A portion of these watersheds were modeled with 100-year, 24-hour storage, as previously only a portion of these watersheds were required to retain the 100-year, 24-hour volume. Future development within Watersheds 01, 02C, 03, and 7A will be required to retain the 100-year, 24-hour storm event.

The Great Park is planned as a multi-functional area including passive and active recreation and will provide 100-year, 24-hour storm water storage for the park. The Great Park Master Plan will include provisions for lake design, retention, landscaping, improvements, and other amenities.

Retention basin sizing is discussed further in Section 4.5, illustrated on Exhibit 7, and summarized in *Table 10 – Onsite Retention Volume Summary* in the appendices. In the event that the basin capacities are exceeded, excess flow will be conveyed by emergency outfall corridors along roadways and/or landscaped tracts as specified by the improvement plan design engineer. The corridors are based upon our understanding of final design and planning by others and are modeled along Mesquite Street Alignment, Everton Terrace, Warner Road North, Point Twenty-Two Boulevard, and Ray Road.

Retention basins shall be designed to drain retained runoff within 36 hours after a storm event. Land uses depicted in the hydrologic models are conceptual and subject to change based on the allowable criteria for the zoning. Each development unit will have a Master Drainage Report that will substantiate any changes from this *Master Drainage Report*.

4.2 Proposed Condition Hydrology

WOODPATEL coordinated with FCDMC between 2006 and 2009 to update the existing condition hydrology of the upstream watersheds and create a proposed full build out hydrologic model for the development of the first version of the Master Drainage Report for Eastmark. In addition, hydraulic analysis was performed on FCDMC facilities including the Powerline Floodway, East Maricopa Floodway, Rittenhouse, and Chandler Heights Detentions Basins, to verify these facilities were not adversely affected by the proposed development of the Site. The individual parcel retention concepts within this report are consistent with the previous Master Drainage Reports completed at Eastmark,

and demonstrate lower 100-year, 24-hour discharges and volumes, as compared to the FCDMC model.

FCDMC provided their full-buildout model, WS4-SEM.DAT, which was updated and utilized for this and superseded *Master Drainage Reports*. Refer to Exhibit 6 and Appendix B for the HEC-1 model and supporting documentation. A combination of constructed grading and a master grading plan, provided by DMB Mesa Proving Grounds, was utilized to delineate onsite sub-basins. The Rational Method was used to determine 100-year, 2-hour and 100-year, 24-hour required retention volumes, and the volumes were inserted into the model as diversions. Based on point precipitation frequency estimates from NOAA Atlas 14, the 100-year, 2-hour precipitation is 2.19 inches and the 100-year, 24-hour precipitation depth is 3.51 inches. Flows in excess of proposed basin capacities were routed downstream to historic outfall locations as identified in the existing condition HEC-1 model. Future development parcels will address onsite retention and interim condition discharges to the Powerline Floodway and downstream regional drainage facilities. The analysis shall be submitted to the City of Mesa for approval and concurrence and may be forwarded to FCDMC by the City for review at their discretion.

Offsite Sub-basins 77B, 77C, 78C, and 79A were updated to reflect current developments within the previous Eastmark masterplan update. Within the proposed-condition model EM125W.DAT, previous changes have been incorporated and additional offsite sub-basins have been modeled with unchanged parameters. Offsite retention volumes were calculated and modeled using approved drainage reports for the adjacent developments with 80 percent of the total required retention volume for each sub-basin being diverted within the HEC-1 models for retention. The remaining 20 percent of the required retention volume was considered not to be retained, consistent with FCDMC requirements to account for unknowns and neglect of maintenance.

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

PRE-DEVELOPED CONDITION		PROPOSED CONDITION	
Location ID	**Discharge**	**Location ID**	**Discharge**
CP 75	661cfs	CP75	626 cfs
79A1	90 cfs	RET17	1 cfs
79A2	225 cfs	CP19A	57 cfs
79A3	156 cfs	RET19	134 cfs
C79B1	1,090 cfs	CP22B	944 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 one 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 channel systems will convey storm water runoff to retention basins located throughout the Site.

4.3.2 Powerline Floodway Channel, Channel Corridors, and Storm Drain Systems

The Powerline Floodway channel and the existing drainage corridor along Signal Butte Road and Williams Field Road will be used to route offsite flows through and around the Site to their historical discharge locations. For design of these facilities, refer to the design reports completed by others.

The Powerline Floodway between Signal Butte Road and Ellsworth Road is planned to remain undisturbed. In the future, any modifications to the Powerline Floodway will require updated hydrology and hydraulic modeling with detailed construction documents for review and permitting by the FCDMC and the City of Mesa.

Existing storm drain systems within Ellsworth Road collect and convey storm water runoff produced within the roadway rights-of-way to drainage facilities downstream of Eastmark, per the previously approved Drainage Report *MCDOT Project No. 68927-2 Ellsworth Road – Phase 2 Ray Road to Portobello Avenue* by Stantec Consulting, Inc., dated December 2004, and the *Drainage Report for Point Twenty-Two Boulevard and S. Ellsworth Road Infrastructure at Eastmark*, by Wood, Patel & Associates, Inc., dated January 18, 2018. The north Ellsworth storm drain system collects runoff for the 10-year storm event from approximately one-half mile south of Elliot Road and connects to the Elliot storm drain system. Retention, as required for this east half-street of Ellsworth Road, will need to be provided.

The south Ellsworth storm drain system collects runoff from approximately one-half mile south of Elliot Road and discharges to the Powerline Floodway channel. Retention, as required for this east half-street of Ellsworth Road, shall be provided as necessary. A portion of Ellsworth Road runoff in the 100-year storm event may be discharged to the south Ellsworth storm drain. This will need to be evaluated and approved in detail when Ellsworth Road is widened to its ultimate cross-section.

Research of the Elliot Road storm drain system and approved drainage report *Elliot Road Detention Basins and Outfall Channel Phases I and II*, by WOODPATEL, dated May 2000, indicates that no site-specific hydraulic calculations were performed for the roadway storm drain stub-outs. Elliot Road was previously widened to full buildout. At this time, it is unknown which existing storm drain stub-outs were utilized from the as-built plans, dated December 2003. However, Elliot Road was included within the watershed, and the assumption was made the Elliot storm drain system was designed to accommodate the 100-year, 24-hour storm event for the rights-of-way.

The proposed channels adjacent to Signal Butte Road and Williams Field Road have been constructed. These channels convey storm water runoff produced within the roadway rights-of-way, combined with offsite flows east of the Site to drainage facilities downstream of Eastmark. 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.

4.4 Erosion and Sedimentation Control

4.4.1 Erosion Control

The proposed development is planned to utilize engineered channels and storm drain systems to collect and convey offsite flows through and around the Site. Due to the relatively flat topography, improved channels will be designed for "sub-critical" flow. Proper channel protection shall be designed and specified within final drainage reports in conjunction with detailed improvement plans.

Onsite runoff shall be conveyed within a hierarchy of roadways, landscaped tracts, channels, and storm drain systems to retention basins. The onsite conveyance system will minimize erosion and sediment deposition. Best Management Practices shall be applied to control erosion and sedimentation during Site construction.

4.4.2 Sedimentation

Special consideration must be taken in regards to sedimentation. The Site lies within an area that has a history of sediment issues. The cohesionless soils, sparse vegetation, and high-intensity rainfall cause large amounts of sediment to move through washes and channels. There is continual, dynamic interaction between sediment particles and the transporting medium, water. Culverts and channels shall be designed with slope and velocity to carry sediment through the system and prevent large amounts of sediment deposition.

4.5 Retention

4.5.1 Retention Storage

In the pre-developed condition, the portion of the Site north of the Powerline Floodway was retained by a series of berms along Ellsworth, Elliot, and Signal Butte Roads. Due to this condition, the FCDMC required Eastmark to retain the majority of runoff from the 100-year, 24-hour storm event in the proposed condition. Twenty-five percent (25%) of the onsite flow, approximately 261 cfs, from this sub-basin is allowed to discharge into the Powerline Floodway. The modeling indicates storage for the 100-year, 2-hour storm event for the majority of the Site, with the remaining portion of the Site storing runoff from the 100-year, 24-hour storm will reduce peak flows and volumes discharging from the Site lower than the original East Mesa ADMP and subsequent FCDMC models. By providing onsite storage, FCDMC drainage structures downstream will not be negatively impacted due to the decreased peak flows and runoff volumes. The table below illustrates this along the Powerline Floodway:

Discharge Location	Updated FCDMC Full-Buildout Model	Eastmark Updated Full-Buildout Model
Powerline Channel at Ellsworth (75TPC)	672 cfs	626 cfs
	181 ac-ft	167 ac-ft

To further evaluate the impacts of the onsite retention, analysis of additional downstream FCDMC facilities was performed. This included review of pre-development and post-development flowrates and water surface elevations along the Powerline Floodway and EMF. Also, review of the impacts to the FCDMC Rittenhouse and Chandler Heights detention basins was performed to verify these facilities are not being negatively impacted. HEC-1 and HEC-RAS models, provided by FCDMC, were updated based on the post-developed condition of Eastmark. Since flows from DU 1, DU 2, and DU 5W are reduced, the table below illustrates the results of the previous analysis.

Basin	Location	Cross-Section	Original Design		Update Eastmark Model	
			Peak Flow (CFS)	Water Surface Elevation (FT)	Peak Flow (CFS)	Water Surface Elevation (FT)
Rittenhouse	EMF	17.082	5,897	1,322.01	5,474	1,321.18
Rittenhouse	EMF (Lateral Weir)	16.93	3,536	1,316.70	3,355	1,316.43
Rittenhouse	EMF	16	3,887	1,315.36	3,715	1,315.20
Chandler Heights	Queen Creek Wash	5535	5,536	1,308.60	5,535	1,308.60
Chandler Heights	Queen Creek Wash (Lateral Weir)	5377	2,312	1,308.47	2,309	1,308.47
Chandler Heights	Queen Creek Wash	1084.9	2,304	1,301.95	2,308	1,301.95
Chandler Heights	EMF	13.084	3,859	1,305.83	3,697	1,305.69
Chandler Heights	EMF (Lateral Weir)	11.987	3,806	1,301.75	3,686	1,301.68
Chandler Heights	EMF (Lateral Structure)	11.74	4,361	1,301.10	4,346	1,301.07
Chandler Heights	EMF	11.033	6,610	1,299.40	6,553	1,299.37

As shown by the results, FCDMC facilities are not negatively impacted by retention for the 100-year, 2-hour and 100-year, 24-hour storm events on Eastmark.

Provided retention for areas within Eastmark currently developed, under construction, and designed, and has been incorporated within the update of this Report. The required retention shown on Table 10 assumes typical runoff coefficients from the FCDMC design manuals. However, final design of the development units accounts for the actual runoff coefficients used by the design engineers, which varied slightly from the assumptions made by this overall Master Plan. Therefore, some development units actual required retention is less than the volume contemplated within this report. The required retention volumes for the areas north and south of the Powerline Floodway are 430.7 ac-ft and 76.7 ac-ft, respectively. The current retention provided based upon final drainage reports provided to WOODPATEL for the areas north and south of the Powerline Floodway are 215.8 ac-ft and 48.4 ac-ft, respectively and the modeled retention volumes are 426.0 ac-ft and 82.1 ac-ft, respectively. As shown on Table 10, if a sub-basin is fully constructed, the retention modeled in HEC-1 is the retention provided. If the sub-basin is not fully constructed, the volume modeled represents the retention required.

Refer to Table 10 within Appendix B, and Exhibit 7 at the end of the report, for a detailed summary of required retention volumes per applicable watershed. This is based on a 100-year, 2-hour precipitation depth of 2.19 inches and 100-year, 24-hour precipitation depth of 3.51 inches obtained from NOAA Atlas 14 Precipitation Frequency Data. Retention basins will be required to dissipate storm water within 36 hours.

4.5.2 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.

4.6 Sustainability Techniques

Eastmark is anticipated to be developed as a sustainable community. Designs will incorporate simple techniques to manage storm water in a practical manner that will be considered environmentally responsible. In the future, new techniques and technologies will advance in sustainable storm water management that may be incorporated into the Site.

4.7 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 Eastmark*, the following conclusions can be made:

1. This *Master Drainage Report for 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 and the City of Mesa.

2. Offsite flows shall be conveyed through and around the Site adequately per jurisdictional requirements. Individual Development Unit Master Drainage Reports may also be submitted to FCDMC, by the City of Mesa, with the appropriate modeling for review and approval as the Site develops.

3. Peak flows and runoff volumes for the post-development 100-year, 24-hour storm shall not exceed existing conditions as calculated using HEC-1 computer modeling.

4. Onsite retention shall be provided to retain runoff generated by the 100-year, 2-hour storm event for the majority of the developed areas and 100-year 24-hour retention in key locations which will prevent post-developed discharges from exceeding historical existing condition discharges.

5. Analysis of downstream FCDMC structures including the Powerline Floodway, East Maricopa Floodway, Rittenhouse Detention Basin, and Chandler Heights Detention Basin show development as proposed within this report for Eastmark does not have negative impacts on these facilities.

6. Flow in excess of onsite storage capacity shall outfall in historic locations with existing condition characteristics without increasing historical flows.

7. Lowest floor elevations shall be set a minimum of one 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

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2. *Drainage Report for Mass Grading of Nova Vista*, CMX, L.L.C., June 28, 2006.

3. *Addendum Drainage Report for Unit D of Nova Vista*, CMX, L.L.C., October 19, 2006.

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6. *Offsite Flow Management for Gila River Ranches*, CMX, L.L.C., December 2, 2004.

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8. *Master Drainage Plan for Mountain Ranch*, DEI Professional Services, LLC, December 8, 1999.

9. *Final Drainage Report for a Portion of East Elliot Road at Mountain Ranch*, DEI Professional Services, LLC, February 22, 2000.

10. *Final Drainage Report for Keighley Place (S05-43)*, Landaide, Inc., March 26, 2007.

11. *Drainage Report MCDOT Project No. #68927-2 Ellsworth Road-Phase 2 Ray Rd. to Portobello Ave*., Stantec Consulting, Inc., December 2004.

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13. *Drainage Design Manual for Maricopa, County, Arizona, Volumes 1 Hydrology,* Flood Control District of Maricopa County, August 15, 2013.

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15. *Drainage Policies and Standards for Maricopa County*, Arizona, Flood Control District of Maricopa County, Draft January 2013.

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20. *Final Drainage Report for First Solar MSA-01, Mesa, Arizona*, Beck Consulting Engineers, Inc., April 18, 2011.

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22. *Master Drainage Report for DU-7 at Mesa Proving Grounds*, Wood, Patel & Associates, Inc., December 20, 2013.

23. *Master Drainage Report Update for Eastmark,* Wood, Patel & Associates, Inc., April 4, 2013.

24. *Master Drainage Report Update for Eastmark,* Wood, Patel & Associates, Inc., December 16, 2013.

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26. *Final Drainage Report for Eastmark DU7 South Parcels 7-1, 7-2, 7-3A, 7-3B, 7-4A, 7-4B, 7-5*, Entellus, June 2012.

27. *Final Drainage Report for Eastmark DU7 South Parcels 7-18, 7-19, 7-20, 7-21*, Entellus, June 2012.

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29. *Final Drainage Report for Eastmark Master Planned Community DU7 North Parcels 6-12*, Hoskin Ryan Consultants, April 30, 2013.

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33. *Eastmark Great Park Phase 2 Improvement Plans*, Westwood Professional Service, Inc., November 11, 2013.

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35. *Master Drainage Report Update for Eastmark,* Wood, Patel & Associates, Inc., April 24, 2014.

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38. *Improvement Plans for the Learning Experience Childcare Facility Development,* Rogue Architecture, April 14, 2016.

39. *Final Drainage Report for Eastmark DU 6 (South) Parcels 6-7 & 6-8,* Hoskin Ryan Consultants, Inc., June 29, 2016.

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59. *Final Drainage Report for Eastmark DU 3/4 North - Phases 2 and 3,* Wood, Patel & Associates, Inc., November 12, 2019.

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APPENDIX A

PRE-DEVELOPED CONDITION DATA AND HYDROLOGY

Hydrology Pre-Developed Condition

100-Year, 24-Hour HEC-1 Output

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *               JUN   1998             *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                    *          609 SECOND STREET           *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   07JUL08  TIME  07:23:20  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************

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

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

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


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

   1          ID   ********************************************************************************
   2          ID        MODEL REVISED:
   3          ID        01-23-08
   4          ID
   5          ID        MODEL REVISION DESCRIPTION:
   6          ID
   7          ID        REFERENCE NEBUILDA.DSS WHEN RUNNING MODEL.
   8          ID
   9          ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  10          ID        DISTRICT OF MARICOPA COUNTY (MIDCURE.DAT).  WATERSHEDS 73B, 73C,
  11          ID        74B, 74C, 77B, 77C, 78B, 78C, AND 79A HAVE ALL BEEN UPDATED TO
  12          ID        REFLECT CURRENT WATERSHED DELINEATIONS, NEW DEVELOPMENT, CURRENT
  13          ID        RETENTION,AND FLOOD ROUTING.
  14          ID
  15          ID        MODEL REVISED BY:
  16          ID        WOOD, PATEL & ASSOCIATES, INC.
  17          ID        DANIEL W. MATTHEWS, E.I.T.
  18          ID
  19          ID        FILE PATH:
  20          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\HYDROLOGY
  21          ID        \MPG Existing Condition Full Model (MPGEX)\MPGEX.DAT
  22          ID
  23          ID   ********************************************************************************I
  24          ID   FILE:  MIDCURE.DAT   JULY 12, 2006
  25          ID   THE FOLLOWING MINOR MODIFICATIONS WERE MADE ON THIS DATE:
  26          ID    1) "C69" CHANGED TO "CP69"
  27          ID    2) "CP62" @ COMBINATION OF 62DTF AND 62F CHANGED TO "CP62F"
  28          ID    3) "CP62" @ COMBINATION OF 62CTE AND 62E CHANGED TO "CP62CE"
  29          ID    4) "C62C" @ COMBINATION OF 62ATC AND 62C CHANGED TO "CP62C"
  30          ID    5) "C67A" CHANGED TO "CP67A"
  31          ID    6) "C67B" CHANGED TO "CP67B"
  32          ID
  33          ID   ********************************************************************************
  34          ID   ________________________________________________________________________________
  35          ID
  36          ID   MODEL DATE OF APRIL 17, 2003:
  37          ID   THIS MODEL IS AN UPDATE TO THE MODEL DESCRIBED BELOW FOR DEC. 03,2002.
  38          ID   THE CHANGES ARE:
  39          ID
  40          ID    1) DIVERSION OF FLOW FOR THE 404 REQUIREMENT ADDED TO DIVERT FLOWS FROM
  41          ID       CRISMON CHANNEL THROUGH SUB-BASIN 67E;
  42          ID    2) SOUTHERN PORTION (THAT DRAINING TO POWERLINE FLOODWAY AND ELLSWORTH ROAD
  43          ID       CHANNEL) COMPLETELY REVISED TO REFLECT THE UPDATED MODEL PREPARED BY
  44          ID       DIBBLE UNDER THE ELLSWORTH ROAD CHANNEL PROJECT;
  45          ID    3) ADDITIONAL ID RECORDS PROVIDED BELOW TO FURTHER EXPLAIN THE MODELING
  46          ID       ASSUMPTIONS MADE FOR THE ELLIOT BASINS UNDER EXISTING LAND USE CONDITIONS
  47          ID    4) THE STUB DIVERSION AT THE INTERSECTION OF ELLIOT AND ELLSWORTH ROADS HAS
  48          ID       BEEN REVISED TO TAKE 180 CFS.
  49          ID
  50          ID   ADDITIONAL MODELING NOTES:
  51          ID    THE PEAK FLOW AT THE END OF CRISMON CHANNEL AFTER THE DIVERSION OF THE 404
  52          ID    FLOW IS 1443 CFS.  OF THIS 1443 CFS, 410 CFS IS DIVERTED INTO THE ELLIOT
  53          ID    DRAIN.  THE REMAINDER OF THE FLOW IS THEN DIVERTED INTO BASIN WA AND ROUTED
  54          ID    THROUGH THROUGH BASIN WB.
  55          ID
```

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

  56      ID
  57      ID   ************************************************************************
  58      ID
  59      ID   MODEL DATE OF DEC. 03, 2002: ELLIOT BASINS AND CRISMON CHANNEL EXTENDED TO
  60      ID   BASIN WA IN THIS MODEL.  BASIN EA MODELED AS DIVERSION OF 35.3 AC-FT.  BASIN
  61      ID   WA OVERFLOWS TOP OF BASIN.  THE PURPOSE OF THIS MODEL IS TO DETERMINE SURFACE
  62      ID   FLOWS AT THE INTERSECTION OF ELLSWORTH AND ELLIOT ROADS FOR THE ELLSWORTH RD
  63      ID   PROJECT.
  64      ID   (CWR 12/03/02)
  65      ID
  66      ID   MODEL DATE OF JUNE 10, 2002
  67      ID
  68      ID   THIS MODEL IS BEING USED TO EVALUATE THE EMF UNDER CURRENT LANDUSE CONDITIONS
  69      ID   WITH THE FOLLOWING STRUCTURES IN PLACE:
  70      ID
  71      ID    1. ELLIOT ROAD STORM DRAIN ON SOUTH SIDE OF ELLIOT ROAD FROM 1/2 MILE EAST
  72      ID       OF CRISMON TO ITS OUTLET WEST OF ELLSWORTH ROAD
  73      ID
  74      ID    2. SANTAN FWY CHANNEL AND BASINS ALONG EAST SIDE OF SANTAN FWY
  75      ID
  76      ID    3. ELLSWORTH ROAD CHANNEL FROM PECOS ROAD NORTH TO THE POWERLINE FLOODWAY
  77      ID
  78      ID     HEC-1 Model for Santan Channel Design
  79      ID
  80      ID     Existing Condition, 100-year, 24-hour Storm
  81      ID     Original Model: TESTADOT.DAT, May 9, 2002, Dave Degerness, FCDMC
  82      ID     Modified Model: EXIST_S.DAT, MAY 20, 2002, SZ, Wood/Patel
  83      ID
  84      ID  ************************************************************************
  85      ID         MODEL NAME: TESTADOT.DAT
  86      ID
  87      ID    ATTENTION: THE FOLLOWING DESCRIPTION DESCRIBES THIS MODEL
  88      ID               YOU MAY IGNORE IF YOU WISH THE REST OF THE COMMENTS
  89      ID
  90      ID    THIS MODEL WAS PREPARED BY DAVE DEGERNESS OF THE FLOOD CONTROL DISTRICT
  91      ID    OF MARICOPA COUNTY FOR USE BY WOOD/PATEL TO DESIGN THE ADOT SANTAN FWY
  92      ID    CHANNEL. DIBBLE AND ASSOCIATES WILL ALSO USE THIS MODEL FOR DESIGN
  93      ID    PURPOSES FOR THE ELLSWORTH CHANNEL PROJECT.
  94      ID
  95      ID    REVISION DATE IS MAY 9, 2002
  96      ID
  97      ID    REVISIONS INCLUDE THE FOLLOWING:
  98      ID     1. UPDATED LANDUSE FROM AERIAL PHOTOGRAPHS DATED 2001 FROM FCD ARCHIVES.
  99      ID        SUBBASINS UPDATED LIE EAST OF THE PROPOSED SANTAN CHANNEL ALIGNMENT AND
 100      ID        NORTH OF ELLIOT ROAD. 11 OF THE 19 SUBBASIN IN THIS AREA EXPERIENCED
 101      ID        A LANDUSE UPDATE WITH AN ASSOCIATED RETENTION VOLUME
 102      ID
 103      ID     2. SUBBASIN ROUTING CHANGES IN THE VICINITY OF CRISMON AND GUADALUPE ROADS
 104      ID        TO ACCOUNT FOR THE SANTA RITA RANCH AND MESQUITE CANYON DEVELOPMENTS.
 105      ID
 106      ID     3. RETENTION VOLUMES FOR SUBBASINS CALCULATED BY VOLUME EQUATION GIVEN ON
 107      ID        PAGE 3-7 OF FCD HYDROLOGY MANUAL. COMPOSITE C VALUE WAS CALCULATED AND
 108      ID        USED FOR VOLUME DETERMINATION. VOLUMES USED IN THIS MODEL WERE
 109      ID        80% OF THE CALCULATED VOLUME.
 110      ID

1                                    HEC-1 INPUT                                    PAGE  3

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

 111      ID     4. ELLIOT STORM DRAIN IN PLACE FROM STATION 90+15 TO ITS OUTLET WEST OF
 112      ID        ELLSWORTH ROAD AT ELLSWORTH ROAD STATION 99+05
 113      ID
 114      ID     5. FOUR DIVERSIONS INTO THE PIPE SYSTEM TOTALING 1100 CFS:
 115      ID          A. 500 CFS AT END OF PIPE: STATION 90+15
 116      ID          B. 250 CFS AT FIRST DIP CROSSING ON ELLIOT ROAD: STATION 69+80
 117      ID          C. 250 CFS AT SECOND DIP CROSSING ON ELLIOT ROAD: STATION 65+05
 118      ID          D. 100 CFS AT 82 IN PIPE STUBOUT AT CORNER OF ELLIOT AND ELLSWORTH
 119      ID             STATION 11+00
 120      ID
 121      ID  ************************************************************************
 122      ID
 123      ID
 124      ID
 125      ID   ********************************************************************
 126      ID        PROJECT:  Queen Creek/Sanokai Wash Hydraulic Master Plan &
 127      ID                  East Maricopa Floodway Capacity Mitigation Study
 128      ID    PREPARED FOR:  Flood Control District of Maricopa County
 129      ID     PREPARED BY:  Huitt-Zollars, Inc
 130      ID        FILENAME:  X-SEMESA.DAT
 131      ID            DATE:  Dec 1999
 132      ID
 133      ID   This model is for the 100-year, 24 hr existing conditions event
 134      ID   for the watershed area tributary to the EMF approximately between
 135      ID   Queen Creek Rd./Rittenhouse Rd. and the Superstition Freeway.
 136      ID
 137      ID   This model was constructed from previous study models and updated
 138      ID   for new existing hydrologic conditions as part of the Queen Creek/
 139      ID   Sanokai Wash HMP & EMF Capacity Mitigation Study.  Previous
 140      ID   studies include the East Mesa ADMP and the Queen Creek ADMS.
 141      ID
 142      ID   This model is one of four supporting hydrologic models used to
 143      ID   evaluate flow in the East Maricopa Floodway (EMF).  Each model
 144      ID   evaluates the hydrology for a specific area that is ultimately
```

```
 145          ID    tributary to the EMF. The four supporting models are:
 146          ID
 147          ID       *  X-NWMESA.DAT - Existing conditions hydrology for NE Mesa
 148          ID                         (~east of the EMF to the CAP(at Hawes Rd.)
 149          ID                         & ~south of McKellips Rd. to US60)
 150          ID
 151          ID       *  X-NEMESA.DAT - Existing conditions hydrology for NW Mesa
 152          ID                         (~area northeast of Hawes Rd./US60)
 153          ID
 154          ID       *  X-SEMESA.DAT - Existing conditions hydrology for SE Mesa
 155          ID                         (~area east of the EMF from US60 south to
 156          ID                          Rittenhouse Rd. {excluding areas
 157          ID                          tributary to Queen Creek})
 158          ID                          X-SEMESA.DAT imports hydrographs from
 159          ID                          X-NEMESA.DAT via DSS files.  Therefore,
 160          ID                          X-NEMESA.DAT must be run first and then
 161          ID                          when running X-SEMESA.DAT, X-NEMESA.DSS
 162          ID                          must be specified as the DSS file
 163          ID                          (the default would be X-SEMESA.DSS)
 164          ID
 165          ID       *  X-QCSW.DAT   - Existing conditions hydrology for Queen
1                                          HEC-1 INPUT                                                PAGE  4

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

 166          ID                         Creek/Sanokai Wash area (all areas
 167          ID                         tributary to Queen Creek & Sanokai Wash
 168          ID                         and areas tributary to the EMF south of
 169          ID                         Rittenhouse Rd.)
 170          ID
 171          ID    IT IS IMPORTANT TO NOTE THAT THE SUPPORTING MODELS DO NOT
 172          ID    CORRECTLY ROUTE FLOWS ALONG THE EMF NOR DO THEY IMPORT ALL
 173          ID    THE NECESSARY FLOWS TO CORRECTLY EVALUATE FLOWS WITHIN THE
 174          ID    EMF.  TO EVALUATE FLOWS WITHIN THE EMF, ALL THE SUPPORTING
 175          ID    MODELS SHOULD BE RUN (TO DEVELOP THE TAPE21 FILE) AND THEN
 176          ID    THE EMF ROUTING MODEL (X-EMF-RT.DAT).  ONLY THE EMF ROUTING
 177          ID    MODEL SHOULD BE USED TO DETERMINE FLOWS WITHIN THE EMF.
 178          ID
 179          ID    The model X-EMF-RT.DAT is the "routing" model used to evaluate
 180          ID    flows in the EMF for the existing conditions.  The model imports
 181          ID    hydrographs via TAPE21 files from the supporting hydrologic
 182          ID    models and then routes them along the EMF from approximately
 183          ID    Brown Rd. and south to Hunt Hwy (the County Line).
 184          ID
 185          ID    **********************************************************************
 186          ID              RECOMMENDED RUN ORDER FOR EMF HYDROLOGY MODELS
 187          ID    **********************************************************************
 188          ID
 189          ID         1. Erase any existing TAPE21 file in run directory.
 190          ID         2. Run X-NEMESA.DAT, X-NWMESA.DAT & X-QCSW.DAT (any order)
 191          ID         3. Run X-SEMESA.DAT (specifying X-NEMESA.DSS as DSS file)
 192          ID         4. Run X-EMF-RT.DAT
 193          ID
 194          ID    **********************************************************************
 195          ID   HYDROLOGY FOR THE EMF-E CAPACITY STUDY
 196          ID
 197          ID   SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
 198          ID   AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
 199          ID   MARCH 1998
 200          ID   SOUTHEAST MESA HIGH RESOLUTION MODEL
 201          ID
 202          ID   FILENAME:  SMQC.DAT
 203          ID
 204          ID   THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
 205          ID   THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
 206          ID   CONDITIONS.
 207          ID
 208          ID   100-YEAR 24-HOUR FREQUENCY
 209          ID
 210          ID   THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
 211          ID   AND EAST OF THE CAP
 212          ID
 213          ID   METHODOLOGY
 214          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
 215          ID   SCS TYPE II RAINFALL DISTRIBUTION
 216          ID   S-GRAPH HYDROGRAPH
 217          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 218          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 219          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 220          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
1                                          HEC-1 INPUT                                                PAGE  5

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

 221          ID   DATED 1994
 222          ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
 223          ID
 224          ID   STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
 225          ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
 226          ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
 227          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
 228          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
 229          ID
 230          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
 231          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
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          232          ID
          233          ID
          234          ID   NOTE: MUST USE MESANW.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS SUPERSTITN
          235          ID
          236          ID
          237          ID     LAST UPDATED ON  6/04/98
          238          ID
          239          ID
          240          ID   DDM MCUHP2 SOUTH EAST MESA ADMP - SOUTH OF SUPERSTITION FREEWAY
                       *DIAGRAM
          241          IT       5  1APR97    0000    2000
          242          IO       5
          243          IN      15
          244          JD    3.60    0.01
          245          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
          246          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
          247          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
          248          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
          249          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
          250          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
          251          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
          252          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
          253          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
          254          PC    .983    .986    .989    .992    .995    .998   1.000
          255          JD    3.58    1.00
          256          JD    3.49    5.00
          257          JD    3.38   10.00
          258          JD    3.24   30.00
          259          JD    3.10   60.00
          260          JD    3.05   90.00
          261          JD    3.00   120.0
          262          JD    2.97  150.00
                       *
                       * DDM   ***** Preserved *****

          263          KK    SOSS
          264          KM   INFL0W FROM SOSSAMAN BASIN VIA SOSSAMAN CHANNEL
          265          KM   QI CARDS ARE BASED ON THE PEAK OF 1800CFS TO SOSSAMAN CHANNEL
          266          BA   12.50
          267          ZR  =QI A=SOSSAMAN DRAIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
                       *
                       * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                                PAGE  6

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


          268          KK   RSOSS
          269          KM   ROUTE FLOWS VIA SOSSAMAN CHANNEL TO BASELINE ROAD
          270          RS       1    FLOW      -1
          271          RC    .030    .025    .030    3500    .005
          272          RX       0       5      10      35      75     110     115     120
          273          RY      10      10      10       4       4      10      10      10
                       * DDM   ***** Updated *****

          274          KK     59A
          275          KM   BASIN 59A
          276          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          277          KM    L=       .9  Lca=       .3   S=   34.9  Kn= .071  LAG=  30.2
          278          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          279          BA     .26
          280          LG     .24     .25    4.55     .41   32.00
          281          UI     30.     74.    140.    180.    235.    354.    298.    230.    176.    131.
          282          UI     68.     50.     32.     19.      9.      9.      9.      9.      0.      0.
          283          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                       * DDM   ***** Preserved *****

          284          KK    C59A
          285          KM    SOSSAMAN DRAIN AT BASELINE ROAD
          286          HC       2
                       * DDM   ***** Preserved *****

          287          KK  59A59B
          288          KM   ROUTE S59A TO 59B VIA SOSSAMAN CHANNEL
          289          KM   BLOCK WALL ON LEFT BANK, SOSSAMAN ROAD ON RIGHT BANK
          290          RS       2    FLOW      -1
          291          RC    .025    .018    .013    6500   .0015
          292          RX       0       3      13      38      78     103     128     203
          293          RY      16      10      10       0       0      10       8      10
                       * DDM   ***** Updated *****

          294          KK     59B
          295          KM   BASIN 59B
          296          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          297          KM    L=      1.2  Lca=       .7   S=   33.9  Kn= .095  LAG=  63.7
          298          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          299          BA     .94
          300          LG     .24     .26    4.65     .38   19.00
          301          UI     50.     50.     57.    168.    206.    243.    275.    304.    345.    388.
          302          UI    471.    602.    618.    511.    445.    400.    354.    310.    273.    240.
          303          UI    202.    147.     94.     86.     81.     67.     50.     50.     32.     15.
          304          UI     15.     15.     15.     15.     15.     15.     15.     15.      0.      0.
          305          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                       *
                       * DDM   ***** Preserved *****
```

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

 306          KK    C59B
 307          KM   SOSSAMAN CHANNEL AT GUADALUPE ROAD
 308          HC       2
              *
              * DDM   ***** Preserved *****

 309          KK  59BT60
 310          KM     ROUTE 59B TO 60 GUADALUPE CHANNEL.  Assumed v=5ft/sec for NSTP calculation
 311          RS       1    FLOW      -1
 312          RC     .02    .013     .02    5500    .005
 313          RX       0     518     522     522     560     560     580    2580
 314          RY     8.5     8.5     8.5       0       0       8       7       6
              * DDM   ***** Updated *****

 315          KK      60
 316          KM   BASIN 60
 317          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 318          KM    L=      2.4  Lca=      1.4   S=   31.8  Kn= .102  LAG= 120.0
 319          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 320          BA    2.30
 321          LG     .22     .26    4.65     .39   20.00
 322          UI     65.     65.     65.     65.     65.    136.    212.    241.    266.    300.
 323          UI    317.    346.    363.    383.    406.    434.    467.    494.    528.    591.
 324          UI    675.    766.    860.    811.    724.    661.    612.    574.    541.    514.
 325          UI    483.    447.    417.    391.    369.    337.    316.    299.    263.    232.
 326          UI    186.    162.    114.    114.    113.    106.    106.    106.     71.     65.
 327          UI     65.     65.     65.     50.     20.     20.     20.     20.     20.     20.
 328          UI     20.     20.     20.     20.     20.     20.     20.     20.     20.     20.
 329          UI     20.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 330          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 331          KK     R60
 332          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
 333          DT     D60     100
 334          DI       0   10000
 335          DQ       0   10000
              * DDM   ***** Preserved *****

 336          KK  EMFGUA
 337          KM     COMBINE S59 AND S60 AT EMF, GUADALUPE ROAD
 338          KO                                     21
 339          HC       2
              *
              * DDM   ***** Preserved *****

 340          KK  GUATEL
 341          KM   ROUTE EMF FLOW FROM GUADALUPE ROAD TO ELLIOT ROAD
 342          RS       5    FLOW      -1
 343          RC     .03    .022     .03    6000   .0003
 344          RX       0     500     520     553     693     726     740     742
 345          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Updated *****
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 346          KK      64
 347          KM   BASIN 64
 348          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 349          KM    L=      1.2  Lca=       .6   S=   25.4  Kn= .104  LAG=  70.1
 350          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 351          KO                                     21
 352          BA     .81
 353          LG     .34     .34    4.70     .26     .00
 354          UI     39.     39.     39.    108.    145.    181.    201.    223.    245.    276.
 355          UI    307.    366.    456.    505.    424.    369.    331.    302.    266.    238.
 356          UI    212.    187.    161.    120.     84.     69.     65.     64.     42.     39.
 357          UI     39.     21.     12.     12.     12.     12.     12.     12.     12.     12.
 358          UI     12.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 359          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 360          KK  EMFELL
 361          KM     COMBINE CP2 AND S64 AT EMF, ELLIOT ROAD
 362          HC       2
              *
              * DDM   ***** Preserved *****

 363          KK  ELTWAR
 364          KM   ROUTE EMF FLOW AT ELLIOT ROAD TO WARNER ROAD VIA THE EMF
 365          RS       4    FLOW      -1
 366          RC     .03    .022     .03    5500   .0003
 367          RX       0     500     520     553     693     726     740     742
 368          RY      14      12      11       0       0      11      11      12
              *
              *
```

```
 369          KK     62B
 370          KM   BASIN 62B
 371          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 372          KM    L=       .6  Lca=       .3   S=   47.5  Kn= .086  LAG=  32.7
 373          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 374          BA     .23
 375          LG     .38     .30    4.65     .38    8.00
 376          UI     24.     52.    107.    138.    173.    243.    289.    215.    171.    133.
 377          UI     97.     52.     40.     26.     18.      7.      7.      7.      7.      0.
 378          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 379          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
              * DDM   ***** Preserved *****

 380          KK   62BTD
 381          KM   ROUTE 62B TO 62D VIA HAWES ROAD
 382          RS       4    FLOW      -1
 383          RC    .045     .04    .045    5280   .0041
 384          RX       0      50      75      77     127     129     154     204
 385          RY       2    1.75    1.50       0       0     1.5    1.75       2
              *
              * DDM   ***** Updated *****
1                                      HEC-1 INPUT                                                PAGE  9

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


 386          KK     62D
 387          KM   BASIN 62D
 388          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 389          KM    L=       .9  Lca=       .3   S=   30.7  Kn= .092  LAG=  43.6
 390          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 391          BA     .46
 392          LG     .42     .29    4.65     .40    1.00
 393          UI     36.     36.    124.    165.    200.    234.    281.    381.    445.    349.
 394          UI    293.    245.    203.    168.    118.     69.     60.     47.     36.     23.
 395          UI     11.     11.     11.     11.     11.     11.      0.      0.      0.      0.
 396          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 397          KK   CP62D
 398          KM   COMBINE FLOWS FROM SUBBASINS 62A, 62B, AND 62D
 399          HC       2
              * HC     3
              *
              * DDM   ***** Preserved *****

 400          KK   62DTF
 401          KM   ROUTE 62D TO 62F VIA HAWES ROAD
 402          RS       8    FLOW      -1
 403          RC    .045    .024    .045    3600   .0033
 404          RX       0     500     750     753     793     796    1046    1546
 405          RY       3     1.5    1.25       0       0    1.25     1.5       3
              *
              *
              * DDM   ***** Updated *****

 406          KK     62F
 407          KM   BASIN 62F
 408          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 409          KM    L=       .6  Lca=       .4   S=   31.9  Kn= .083  LAG=  35.7
 410          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 411          BA     .26
 412          LG     .34     .33    4.65     .29    2.00
 413          UI     24.     44.    100.    130.    159.    202.    294.    257.    203.    163.
 414          UI    130.     96.     53.     41.     29.     24.      7.      7.      7.      7.
 415          UI      7.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 416          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****
              *  KK  CP62

 417          KK   CP62F
 418          KM   COMBINE FLOWS FROM SUBBASINS 62D, 62E AND 62F AND 62C
 419          HC       2
              * HC     4
              * DDM   ***** Preserved *****
1                                      HEC-1 INPUT                                                PAGE 10

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


 420          KK   62T63
 421          KM     ROUTE CP62 TO S63 viA WASH.
 422          KM     WASH CROSSING HAWES, NORTH OF ELLIOT
 423          RS       5    FLOW      -1
 424          RC    .045     .04    .045    6000  0.0055
 425          RX       0     500     750     770     780     800    1050    1550
 426          RY       5       4       3       0       0       3       4       5
              * DDM   ***** Updated *****

 427          KK      63
 428          KM   BASIN 63
```

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 429          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 430          KM    L=      2.0  Lca=      1.5   S=   20.0  Kn= .088  LAG= 108.0
 431          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 432          BA     .91
 433          LG     .37     .32    4.65     .32    2.00
 434          UI     28.     28.     28.     28.     30.     93.    101.    114.    132.    141.
 435          UI    153.    162.    172.    183.    200.    214.    229.    258.    303.    339.
 436          UI    379.    341.    304.    277.    256.    240.    227.    211.    195.    179.
 437          UI    168.    155.    143.    134.    119.    103.     82.     66.     50.     50.
 438          UI     48.     47.     47.     34.     28.     28.     28.     28.     15.      9.
 439          UI      9.      9.      9.      9.      9.      9.      9.      9.      9.      9.
 440          UI      9.      9.      9.      9.      0.      0.      0.      0.      0.      0.
 441          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****

 442          KK    CP63
 443          KM     COMBINE S63 AND CP62
 444          HC       2
              * DDM   ***** Preserved *****

 445          KK   63T71
 446          KM     ROUTE CP63 TO S71 VIA SHEET FLOW
 447          KM     SOSSAMAN SOUTH OF ELLIOT
 448          RS      11    FLOW      -1
 449          RC    .055    .045    .055    5280  0.0005
 450          RX       0    1000    1005    1010    1013    1043    1543    2043
 451          RY       6       5       0       0       3       5       2       5
              * ************************************************************************
              * DWM   ***** UPDATED *****
              * BASIN 68B WAS SEPERATED INTO 3 BASINS TO CALCULATE OFFSITE FLOW IMPACTS
              * TO BASIN 25.
              *

 452          KK    68B1   BASIN
 453          KM   BASIN 68B1
 454          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 455          KM    L=0.75  Lca=0.38  S=32.3  Kn=0.090  LAG=41.6
 456          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 457          BA   0.146
 458          LG    0.35    0.37    5.20    0.21       0
 459          UI      12      15      41      57      69      81     101     142     134     105
 460          UI      90      73      59      46      27      20      17      12       8       4
 461          UI       4       4       3       4       0       0       0       0       0       0
1                                        HEC-1 INPUT                                          PAGE 11

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

 462          UI       0       0       0       0       0       0       0       0       0       0
 463          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 464          KK    68B2   BASIN
 465          KM   BASIN 68B2
 466          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 467          KM    L=0.55  Lca=0.28  S=32.4  Kn=0.090  LAG=32.9
 468          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 469          BA   0.060
 470          LG    0.35    0.37    5.20    0.21       0
 471          UI       6      14      26      36      44      60      74      56      44      34
 472          UI      26      14      10       7       5       2       2       2       2       0
 473          UI       0       0       0       0       0       0       0       0       0       0
 474          UI       0       0       0       0       0       0       0       0       0       0
 475          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 476          KK    68B3   BASIN
 477          KM   BASIN 68B3
 478          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 479          KM    L=0.36  Lca=0.18  S=32.2  Kn=0.090  LAG=23.7
 480          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 481          BA   0.036
 482          LG    0.35    0.37    5.20    0.21       0
 483          UI       5      19      29      40      61      45      32      22      10       7
 484          UI       4       1       2       2       0       0       0       0       0       0
 485          UI       0       0       0       0       0       0       0       0       0       0
 486          UI       0       0       0       0       0       0       0       0       0       0
 487          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 488          KK    CP68
 489          KM   COMBINE FLOWS FROM BASINS 68B1, 68B2, AND 68B3
 490          HC       3
              *
              *
              * DDM   ***** Preserved *****

 491          KK  68BT69
 492          KM   ROUTE S68B TO S69 VIA WASH CROSSING HAWES
 493          RS       3    FLOW      -1
 494          RC    .045     .04    .045    2750   .0036
 495          RX       0     500     950    1003    1007    1057    1511    2011
 496          RY       4     3.5       3       0       0       2     2.5       3
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                *
                * DDM   ***** Updated *****
1                                       HEC-1 INPUT                                                     PAGE 12

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


            497          KK      69
            498          KM   BASIN 69
            499          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            500          KM    L=       .7  Lca=       .3   S=   22.4  Kn= .094  LAG=  42.3
            501          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
            502          BA     .09
            503          LG     .41     .31    4.70     .35     .00
            504          UI      7.      8.     26.     35.     41.     49.     60.     84.     85.     67.
            505          UI     57.     46.     38.     31.     18.     13.     12.      7.      7.      2.
            506          UI      2.      2.      2.      2.      2.      0.      0.      0.      0.      0.
            507          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                * DDM   ***** Preserved *****
                *  KK   C69

            508          KK    CP69
            509          KM   COMBINE FLOWS FROM C68B AND 69
            510          HC       2
                *
                * DDM   ***** Preserved *****

            511          KK   69T71
            512          KM     ROUTE S69 TO S71 VIA WASH AND SHEET FLOW, INCREASE OVERBANK N VALUES
            513          RS      11    FLOW      -1
            514          RC    .055    .045    .055    6000   .0033
            515          RX       0     500    1000    1001    1002    1500    2000    2500
            516          RY       4       3       2       0       0       2       3       4
                *
                * DDM   ***** Updated *****

            517          KK      71
            518          KM   BASIN 71
            519          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            520          KM    L=      2.4  Lca=       .9   S=   25.4  Kn= .093  LAG=  97.2
            521          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
            522          BA    0.86
            523          LG     .39     .32    4.70     .32     .00
            524          UI     38.     38.     38.     38.     83.    127.    144.    174.    186.    204.
            525          UI    216.    231.    252.    275.    294.    330.    387.    453.    500.    441.
            526          UI    392.    357.    329.    307.    287.    261.    239.    222.    202.    186.
            527          UI    174.    145.    115.     98.     67.     67.     63.     62.     62.     38.
            528          UI     38.     38.     38.     24.     12.     12.     12.     12.     12.     12.
            529          UI     12.     12.     12.     12.     12.     12.     12.     12.      0.      0.
            530          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

            531          KK      25   BASIN
            532          KM   BASIN 25
            533          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
            534          KM    L=0.90  Lca=0.41  S=16.7  Kn=0.086  LAG=53.7
            535          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
            536          BA   0.208
            537          LG    0.39    0.32    4.70    0.32       0
1                                       HEC-1 INPUT                                                     PAGE 13

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

            538          UI      14      14      37      59      72      83      95     114     147     180
            539          UI     148     122     107      92      76      64      48      28      24      23
            540          UI      14      15       6       5       4       4       5       4       4       0
            541          UI       0       0       0       0       0       0       0       0       0       0
            542          UI       0       0       0       0       0       0       0       0       0       0
                *
                *

            543          KK   25T71   ROUTE
            544          KM   ROUTE BASIN 25 TO BASIN 71 VIA WASH AND SHEET FLOW
            545          RS      11    FLOW      -1
            546          RC   0.045   0.040   0.045    5686  0.0050    0.00
            547          RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
            548          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
                *
                *
                * DDM   ***** Preserved *****

            549          KK    CP71
            550          KM   COMBINE 63T71, 69T71, 71, 25T71
            551          HC       4
                *
                * DDM   ***** Preserved *****

            552          KK   71T72
            553          KM    ROUTE CP71 TO S72 VIA DIKE
            554          KM     WASH WEST OF INTERSECTION OF SOSSAMAN & WARNER
                * KO                                    21
            555          RS       2    FLOW      -1
            556          RC    .055    .045    .055    3750   .0037
```

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 557          RX       0     500    1000    1007    1017    1025    1530    2030
 558          RY       9     8.5       8       0       0       8     8.5       9
              *
              * DDM   ***** Updated *****

 559          KK      72
 560          KM   BASIN 72
 561          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 562          KM    L=      1.8  Lca=       .6   S=   13.1  Kn= .089  LAG=  79.1
 563          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 564          BA     .84
 565          LG     .35     .37    5.30     .20    1.00
 566          UI     36.     36.     36.     66.    123.    146.    170.    189.    206.    224.
 567          UI    248.    274.    308.    383.    445.    449.    383.    340.    308.    284.
 568          UI    256.    230.    211.    184.    170.    144.    110.     82.     63.     61.
 569          UI     59.     53.     36.     36.     36.     20.     11.     11.     11.     11.
 570          UI     11.     11.     11.     11.     11.     11.     11.      0.      0.      0.
 571          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                        HEC-1 INPUT                                          PAGE 14

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


 572          KK  CPKNOX
 573          KM   COMBINE FLOW AT KNOX ROAD BEFORE COMBINING FLOW IN THE EMF
 574          KO                                    21
 575          HC       2
              * DDM   ***** Preserved *****

 576          KK  EMFWAR
 577          KM   COMBINE ROUTED FLOW FROM 71 WITH EMF
 578          HC       2
              *
              * DDM   ***** Preserved *****

 579          KK  WARTKN
 580          KM   ROUTE EMF WARNER ROAD FLOW TO KNOX ROAD
 581          RS       2    FLOW      -1
 582          RC     .03    .022     .03    2500   .0003
 583          RX       0     500     520     553     693     726     740     742
 584          RY      14      12      11       0       0      11      11      12
              *
              * DDM   ***** Updated *****

 585          KK     70B
 586          KM   BASIN 70B
 587          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 588          KM    L=      1.0  Lca=       .7   S=   23.8  Kn= .090  LAG=  63.2
 589          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 590          BA     .33
 591          LG     .37     .27    8.00     .08    1.00
 592          UI     20.     20.     24.     68.     84.     99.    112.    124.    141.    159.
 593          UI    194.    250.    246.    204.    178.    160.    141.    124.    109.     96.
 594          UI     78.     56.     36.     34.     33.     25.     20.     20.     10.      6.
 595          UI      6.      6.      6.      6.      6.      6.      6.      0.      0.      0.
 596          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

 597          KK      26   BASIN
 598          KM   BASIN 26
 599          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 600          KM    L=0.42  Lca=0.19  S=21.4  Kn=0.090  LAG=27.7
 601          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 602          BA   0.045
 603          LG    0.37    0.27    8.00    0.08       1
 604          UI       5      16      28      36      51      65      47      36      26      15
 605          UI       9       6       3       1       2       1       0       0       0       0
 606          UI       0       0       0       0       0       0       0       0       0       0
 607          UI       0       0       0       0       0       0       0       0       0       0
 608          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


 609          KK  26T70B   ROUTE
 610          KM   ROUTE BASIN 26 TO BASIN 70B VIA WASH AND SHEET FLOW
 611          RS       3    FLOW      -1
 612          RC   0.045   0.040   0.045    4688  0.0057    0.00
 613          RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
 614          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
              *
              *

 615          KK   CP70B
 616          KM   COMBINE ROUTED FLOW FROM 26 AND 70B
 617          HC       2
              *
              *

 618          KK  70BT76
```

```
 619          KM   ROUTE 70B TO 76B VIA WASH CROSSING SOSSAMAN, SOUTH OF WARNER ROAD
 620          RS      11    FLOW      -1
 621          RC    .045     .04    .045    5500   .0041
 622          RX       0     500    1000    1003    1007    1011    1511    2011
 623          RY       4     3.5       3       0       0       2     2.5       3
              *
              * DDM   ***** Updated *****

 624          KK     76B
 625          KM   BASIN 76B
 626          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 627          KM    L=      1.8  Lca=       .9   S=   27.4  Kn= .091  LAG=  82.1
 628          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 629          BA     .64
 630          LG     .36     .26    8.80     .05     .00
 631          UI     26.     26.     26.     40.     87.    102.    122.    134.    146.    158.
 632          UI    174.    193.    210.    247.    299.    345.    306.    266.    240.    219.
 633          UI    203.    182.    164.    151.    133.    123.    104.     80.     61.     46.
 634          UI     45.     43.     42.     26.     26.     26.     21.      8.      8.      8.
 635          UI      8.      8.      8.      8.      8.      8.      8.      8.      8.      0.
 636          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 637          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

 638          KK    KNOX
 639          KM   COMBINE AT KNOX ROAD
 640          KO                                    21
 641          HC       2
              *

 642          KK  EMFKNX
 643          KM   COMBINE FLOWS IN EMF AT KNOX ROAD
 644          HC       2
              *
              * DDM   ***** Preserved *****
1                                  HEC-1 INPUT                                          PAGE 16

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


 645          KK   CAP1A
 646          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
 647          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
 648          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
 649          IN      60
 650          BA     .01
 651          QI       0      65     217     217     217     217     217     217     217     217
 652          QI     217     217     217     217     217     217     217     217     217     217
 653          QI     217     217     217     217     217
              *
              * DDM   ***** Preserved *****

 654          KK   RCA1A
 655          KM   ROUTE FLOW FROM CAP OVERCHUTE CAP1A TO C65A AT GUADALUPE RD ALIGNMENT AND
 656          KM   MOUNTAIN RD ALIGNMENT (1/2 MILE EAST OF SIGNAL BUTTE RD).
 657          RS       9    FLOW      -1
 658          RC    .045     .04    .045    8000    .004
 659          RX       0     500    1000    1006    1026    1032    1511    2011
 660          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Preserved *****

 661          KK   CAP1B
 662          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
 663          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
 664          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS PER PIPE
 665          IN      60
 666          BA     .01
 667          QI       0      65     217     217     217     217     217     217     217     217
 668          QI     217     217     217     217     217     217     217     217     217     217
 669          QI     217     217     217     217     217
              *
              * DDM   ***** Preserved *****

 670          KK  RCAP1B
 671          KM   ROUTE FLOW FROM CAP OVERCHUTE CAP1B TO C65A AT GUADALUPE RD ALIGNMENT AND
 672          KM   MOUNTAIN RD ALIGNMENT (1/2 MILE EAST OF SIGNAL BUTTE RD).
 673          RS      10    FLOW      -1
 674          RC    .045     .04    .045    8500    .004
 675          RX       0     500    1000    1006    1026    1032    1511    2011
 676          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****

 677          KK    65AWBASIN
 678          KM   BASIN 65AW
 679          KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
 680          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 681          KM    L=       .9  Lca=       .6   S=   54.7  Kn= .090  LAG=  26.1
 682          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 683          BA   0.433
 684          LG    0.30    0.25    5.30    0.23      15
 685          UI      53     163     279     363     542     612     445     333     237     117
 686          UI      84      54      19      17      16      17       0       0       0       0
1                                  HEC-1 INPUT                                          PAGE 17
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 687          UI       0       0       0       0       0       0       0       0       0       0       0
              *

 688          KK   D65AW
 689          KM   DIVERT FOR RETENTION VOLUME
 690          DT  DIV65A       6
 691          DI       0   10000
 692          DQ       0   10000
              * DDM   ***** Preserved *****

 693          KK   C65AW
 694          KM   COMBINE FLOWS FROM CAP OVERCHUTES 1A AND 1B (131+90 & 150+00) AND 65A
 695          HC       3
              *
              * DDM   ***** Preserved *****

 696          KK  65AWTB
 697          KM   ROUTE 65A TO 65B VIA SIPHON DRAW
 698          RS      11    FLOW      -1
 699          RC    .045     .04    .045   11500   .0003
 700          RX       0     500    1000    1003    1053    1056    1511    2011
 701          RY       4     3.5       3       0       0       2     2.5       3
              *
              * DDM   ***** Updated *****

 702          KK     65A
 703          KM   BASIN 65A
 704          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 705          KM    L=      1.6  Lca=       .9   S=   51.2  Kn= .089  LAG=  69.7
 706          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 707          BA    2.54
 708          LG     .35     .36    5.10     .26    1.00
 709          UI    122.    122.    122.    345.    457.    572.    635.    703.    775.    875.
 710          UI    972.   1166.   1460.   1573.   1316.   1148.   1032.    937.    826.    739.
 711          UI    654.    583.    493.    362.    244.    217.    201.    198.    122.    122.
 712          UI    122.     52.     38.     38.     38.     38.     38.     38.     38.     38.
 713          UI     38.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 714          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 715          KK   65ATB
 716          KM   ROUTE FLOW FROM MERIDIAN RD TO CRISMON ROAD ALIGNMENT ALONG ELLIOT RD.
 717          RS       8    FLOW      -1
 718          RC     .05    .045    .045   10500    .005
 719          RX       0      20      25      30      38      43     100     200
 720          RY      12       8       8       0       0       5       6       7
              *
              * DDM   ***** Updated *****
1                                      HEC-1 INPUT                                                PAGE 18

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


 721          KK     65BBASIN
 722          KM   BASIN 65B
 723          KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
 724          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 725          KM    L=      2.0  Lca=      1.2   S=   37.5  Kn= .090  LAG=  91.5
 726          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 727          BA   1.374
 728          LG    0.32    0.37    6.00    0.15       8
 729          UI      57      57      57      92     194     225     267     299     322     345
 730          UI     388     426     463     565     677     747     650     559     512     470
 731          UI     433     382     353     313     284     258     209     163     111     101
 732          UI      95      95      75      56      57      57      26      18      18      17
 733          UI      18      17      18      17      18      17      18      17       0       0
 734          UI       0       0       0       0       0       0       0       0       0       0
 735          UI       0       0       0       0       0       0       0       0       0       0
              *

 736          KK    D65B
 737          KM   DIVERSION FOR RETENTION
 738          DT  DIV65B      16
 739          DI       0   10000
 740          DQ       0   10000
              * DDM   ***** Preserved *****

 741          KK   CP65B
 742          KM   COMBINE S65A WITH 65B
 743          HC       3
              *

 744          KK  DIVPIP
 745          KM   DIVERT FLOWS BELOW 500 CFS INTO THE ELLIOT ROAD PIPE.
 746          KM   FOLLOW FLOW CAPACITIES FROM FINAL DESIGN OF ELLIOT BASINS:  500 CFS DIRECTLY
 747          KM   INTO PIPE; 30 CFS FROM DIVERSION STRUCTURE INTO PIPE; AND, 10 CFS FROM
 748          KM   BASIN EA OUTFLOW INTO PIPE.  (CWR 11/25/02)
              * KM DIVERT FLOWS BELOW 500 CFS INTO THE ELLIOT ROAD PIPE. AVAILABLE HEADWATER
              * KM DETERMINED BY CATCH BASIN IN WOOD/PATEL DESIGN. FLOWS ABOVE 500 CFS TRAVEL
              * KM IN ORIGINAL ROUTING TOWARD THE CORNER OF ELLIOT AND ELLSWORTH ROAD
              * KM DIVERT OCCURS AT STATION 90+15 IN WOOD PATEL PLANS
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 749          DT    PIPE
 750          DI       0     500     600     800    1000    1200    1400    1600    1800    2000
 751          DQ       0     500     500     500     500     500     500     500     500     500
              *

 752          KK      EA
 753          KM   DIVERSION FOR BASIN EA STORAGE
 754          DT  DIV65B    35.3
 755          DI       0   10000
 756          DQ       0   10000
              *
              * DDM   ***** Preserved *****
1                                     HEC-1 INPUT                                                PAGE 19

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


 757          KK  65TA66
 758          KM   ROUTE 65B TO 66D VIA GM PERIMETER CHANNEL
 759          KM   ROUTING CHANGED TO ROUTE FLOW TO THE FIRST DIP CROSSING ALONG ELLIOT RD
 760          KM   WHICH IS AT STATION 69+80
 761          RS       1    FLOW      -1
 762          RC    0.05   0.045   0.045    2055    .005
 763          RX       0      20      25      30      38      43     100     200
 764          RY      12       8       8       0       0       5       6       7
              *
              *

 765          KK  65TB66
 766          KM   ROUTE 65B TO 66D VIA GM PERIMETER CHANNEL
 767          KM   ROUTING CHANGED TO ROUTE FLOW TO THE SECOND DIP CROSSING ALONG ELLIOT RD
 768          KM   WHICH IS AT STATION 65+05
 769          RS       1    FLOW      -1
 770          RC    0.05   0.045   0.045     475    .005
 771          RX       0      20      25      30      38      43     100     200
 772          RY      12       8       8       0       0       5       6       7
              *
              *

 773          KK  65TC66
 774          KM   ROUTE 65B TO 66D VIA GM PERIMETER CHANNEL
 775          KM   ROUTING CHANGED TO ROUTE FLOW FROM THE SECOND DIP CROSSING ALONG ELLIOT AT
 776          KM   STA 65+05 TO THE CORNER OF ELLIOT AND ELLSWORTH ROADS STA 11+00 IN THE WOOD
 777          KM   PATEL ENGINEERING DRAWINGS, A DISTANCE OF 5405 FEET
 778          RS       5    FLOW      -1
 779          RC    0.05   0.045   0.045    5405    .005
 780          RX       0      20      25      30      38      43     100     200
 781          RY      12       8       8       0       0       5       6       7
              *

 782          KK     66A
 783          KM   BASIN 66A
 784          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 785          KM    L=       .7  Lca=       .3   S=   55.9  Kn= .086  LAG=  31.2
 786          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 787          BA     .26
 788          LG     .35     .38    6.00     .17    5.00
 789          UI     29.     68.    132.    170.    217.    326.    310.    236.    183.    141.
 790          UI     86.     49.     38.     28.      9.      9.      9.      9.      0.      0.
 791          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****

 792          KK   66ATB
 793          KM   ROUTE S66A TO 66B VIA WASH CROSSING BASELINE
 794          RS       5    FLOW      -1
 795          RC    .045     .04    .045    7500   .0077
 796          RX       0     500     980    1003    1007    1031    1511    2011
 797          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Updated *****
1                                     HEC-1 INPUT                                                PAGE 20

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


 798          KK     66B
 799          KM   BASIN 66B
 800          KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
 801          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 802          KM    L=      1.6  Lca=      1.0   S=   43.3  Kn= .090  LAG=  77.0
 803          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 804          BA   0.668
 805          LG    0.31    0.33    5.00    0.23       2
 806          UI      31      30      31      76     112     136     155     173     185     209
 807          UI     233     263     332     389     371     316     282     254     232     206
 808          UI     183     162     149     125      93      67      55      51      51      36
 809          UI      31      31      23      10       9      10       9       9      10       9
 810          UI      10       9       9       0       0       0       0       0       0       0
 811          UI       0       0       0       0       0       0       0       0       0       0
              *

 812          KK    D66B
 813          KM   RETENTION VOLUME DIVERSION
 814          DT  DIV66B      13
```

```
 815          DI       0   10000
 816          DQ       0   10000
              *
              * DDM   ***** Preserved *****

 817          KK   CP66B
 818          KM   COMBINE S66A AND S66B
 819          HC       2
              *

 820          KK   66BTC
 821          KM   ROUTE FLOW FROM CP66B TO CP67C VIA A NEW CHANNEL ALONG THE SOUTH SIDE OF
 822          KM   GUADALUPE ROAD TO SUBBASIN 67C. CHANNEL IS PART OF THE SANTA RITA RANCH
 823          KM   DEVELOPMENT AND WAS DESIGNED BY DAVID EVANS. THIS PORTION OF THE CHANNEL IS
 824          KM   PREDOMINATELY GRASS
 825          RS       2    FLOW      -1
 826          RC    .035    .030    .035    2640   .0048
 827          RX       0       5      10      18      48      66      71      76
 828          RY      50      48      47    42.5    42.5      47      48      50
              *
              *
              * DDM   ***** Preserved *****

 829          KK  ADOT-E
 830          KM   INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY ENTERING 67A
 831          KM   FROM EAST ADOT DETENTION BASIN 4105.
 832          BA    0.01
 833          ZR  =QI A=ADOT EAST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              * DDM   ***** Preserved *****
1                                     HEC-1 INPUT                                          PAGE 21

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

 834          KK  AET67A
 835          KM    ROUTE SUPERSTITION FLOW THROUGH 67A TO BASELINE ROAD
 836          IN      15
 837          RS       3    FLOW      -1
 838          RC    .045    .040    .045    5500    .010
 839          RX       0     100     110     120     130     140     150     250
 840          RY       5       4       3       1       1       3       4       5
              *
              * DDM   ***** Updated *****

 841          KK     67A
 842          KM   BASIN 67A
 843          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 844          KM    L=      1.0  Lca=       .7   S=   42.9  Kn= .082  LAG=  50.1
 845          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 846          BA     .30
 847          LG     .32     .34    4.70     .28    9.00
 848          UI     20.     20.     52.     82.    101.    116.    135.    158.    208.    253.
 849          UI    211.    177.    154.    130.    111.     95.     69.     44.     35.     33.
 850          UI     21.     20.     12.      6.      6.      6.      6.      6.      6.      0.
 851          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 852          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * DDM   ***** Preserved *****
              *  KK  C67A

 853          KK   CP67A
 854          KM    COMBINE FLOWS FROM SUP3 AND SUBBASIN 67A
 855          HC       2
              *
              * DDM   ***** Preserved *****

 856          KK   67ATC
 857          KM   ROUTE 67A TO 67C VIA WASH CROSSING BASELINE
 858          RS       5    FLOW      -1
 859          RC    .055    .045    .055    6300   .0071
 860          RX       0     500     980    1003    1007    1031    1511    2011
 861          RY       4     3.5       3       0       0       3     3.5       4
              *
              * DDM   ***** Preserved *****

 862          KK    SUP2
 863          KM   INFLOW FROM NORTH OF SUPERSTITION FREEWAY, DISCHARGING INTO 67B
 864          BA    0.01
 865          ZR  =QI A=ADOT WEST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              * DDM   ***** Preserved *****

 866          KK   RSUP2
 867          KM   ROUTE SUP2 THROUGH SUBBASIN 67B
 868          IN      15
 869          RS      11    FLOW      -1
 870          RC    .045    .045    .045    4500   .0056
 871          RX       0     500    1000    1003    1007    1011    1511    2011
1                                     HEC-1 INPUT                                          PAGE 22

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

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

```
                * DDM   ***** Updated *****

  873           KK     67BBASIN
  874           KM   BASIN 67B
  875           KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
  876           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  877           KM    L=      1.2  Lca=       .9   S=   28.0  Kn= .083  LAG=  64.5
  878           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  879           BA   0.532
  880           LG    0.30    0.32    4.90    0.26      16
  881           UI      31      31      54     110     141     162     182     209     237     287
  882           UI     383     373     306     271     236     204     181     155     129      96
  883           UI      59      54      51      36      30      30       9      10       9      10
  884           UI       9      10       9      10       0       0       0       0       0       0
  885           UI       0       0       0       0       0       0       0       0       0       0
                *

  886           KK    D67B
  887           KM   DIVERSION FOR RETENTION VOLUME
  888           DT  DIV67B      16
  889           DI       0   10000
  890           DQ       0   10000
                *
                * DDM   ***** Preserved *****
                *  KK  C67B

  891           KK   CP67B
  892           KM   COMBINE FLOWS FROM SUP2 AND SUBBASIN 67B
  893           HC       2
                * DDM   ***** Preserved *****

  894           KK   67BTC
  895           KM   ROUTE SUBBASIN 67B TO 67C ALONG CRISMON ROAD
  896           KM   DIRT CHANNEL WITH MUCH VEGETATION, LEFT BANK DESERT, RIGHT BANK IS AG FIELD
  897           RS      11    FLOW      -1
  898           RC    .045    .055    .065    5280   .0046
  899           RX       0     500    1000    1003    1018    1021    1556    2056
  900           RY       8       7       6       1       1       6       7       8
                *
                * DDM   ***** Updated *****

  901           KK     67CBASIN
  902           KM   BASIN 67C
  903           KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
  904           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  905           KM    L=      1.2  Lca=       .7   S=   40.2  Kn= .090  LAG=  59.3
  906           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  907           BA   0.925
  908           LG    0.34    0.35    5.10    0.22       4
  909           UI      54      55     102     196     254     291     325     378     428     536
  910           UI     693     631     527     462     405     350     306     262     211     145
  911           UI      95      92      86      55      54      36      16      17      17      16
  912           UI      17      17      17      16       0       0       0       0       0       0
1                                        HEC-1 INPUT                                          PAGE 23

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

  913           UI       0       0       0       0       0       0       0       0       0       0
                *

  914           KK    D67C
  915           KM   DIVERSION FOR RETENTION
  916           DT  DIV67C       8
  917           DI       0   10000
  918           DQ       0   10000
                *
                * DDM   ***** Preserved *****

  919           KK    C67C
  920           KM   COMBINE SUBBASINS 67C AND 67A AND 67B
  921           HC       3
                *

  922           KK   CP67C
  923           KM   ADDED A CONCENTRATION POINT TO ACCOUNT FOR FLOWS COMING FROM THE NEW CHANNEL
  924           KM   ALONG GUADALUPE ROAD
  925           HC       2
                *
                *

  926           KK   67CTD
  927           KM   ROUTE FLOW IN THE GUNITE CHANNEL FROM UNDER THE BOX CULVERT AT THE
  928           KM   INTERSECTION OF GUADALUPE AND CRISMON TO APPROX 1/2 MILE SOUTH WERE IT WILL
  929           KM   BE COMBINDED WITH SUBBASIN 67D
  930           RS       1    FLOW      -1
  931           RC    .025    .018    .025    2640    .004
  932           RX       0       5      10      22      38      50      55      60
  933           RY      50      48      47      41      41      47      48      50
                *
                * DDM   ***** Updated *****

  934           KK     67DBASIN
  935           KM   BASIN 67D
  936           KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN PROJECT
  937           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
 938          KM    L=       .6  Lca=       .4   S=   34.7  Kn= .090  LAG=  36.9
 939          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 940          BA   0.125
 941          LG    0.33    0.31    5.20    0.21       8
 942          UI      14      39      71      92     124     177     134     105      79      53
 943          UI      26      20      15       5       4       4       5       0       0       0
 944          UI       0       0       0       0       0       0       0       0       0       0
 945          UI       0       0       0       0       0       0       0       0       0       0
              *

 946          KK    D67D
 947          KM   DIVERSION FOR RETENTION
 948          DT  DIV67D       5
 949          DI       0   10000
 950          DQ       0   10000
              *
1                                      HEC-1 INPUT                                          PAGE 24

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

 951          KK   CP67D
 952          KM   COMBINE FLOWS IN THE GUNITE LINED CHANNEL WITH FLOW FROM SUBBASIN 67D.
 953          KM   FLOWS WILL BE CARRIED FOR A SHORT DISTANCE IN THE SAME PORTION OF GUNITE
 954          KM   CHANNEL ALONG THE SOUTH SIDE OF THE MESQUITE CANYON DEVELOPMENT AND THEN
 955          KM   VIA A NATURAL WASH WHERE FLOW WILL BE COMBINDED WITH SUBBASIN 67E
 956          HC       2
              *
              *

 957          KK   67T66
 958          KM   REACH CN-2 plus culvert CNC-2
 959          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM APPROX. 1/2 MILE SOUTH
              *  KM OF GUADALUPE ROAD TO THE INFLOW SPILLWAY FOR THE ELLIOT DETENTION BASIN.
 960          KM   OF GUADALUPE ROAD TO THE NATURAL WASH IN SUBBASIN 66C.
              *       Sta. 20+00 to Sta. 39+00
 961          RS       1    FLOW      -1
 962          RC    .032    .032    .032    1000  0.0035
 963          RX       0       6      12      24      64      76      82      88
 964          RY       4       3       2       0       0       2       3       4
              *
              *

 965          KK     66CBASIN
              * KO     1
 966          KM   BASIN 66C
 967          KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN CHANNEL PROJECT
 968          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 969          KM    L=      1.1  Lca=       .7   S=   39.5  Kn= .090  LAG=  57.8
 970          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 971          BA   0.499
 972          LG    0.33    0.38    5.40    0.19       5
 973          UI      34      34      95     142     179     202     235     285     371     432
 974          UI     349     292     254     214     179     151     106      61      57      50
 975          UI      34      32      10      11      10      11      10      11      10       0
 976          UI       0       0       0       0       0       0       0       0       0       0
 977          UI       0       0       0       0       0       0       0       0       0       0
              *

 978          KK    D66C
 979          KM   DIVERSION FOR RETENTION VOLUME
 980          DT  DIV66C      14
 981          DI       0   10000
 982          DQ       0   10000
              *

 983          KK   CP66C
 984          KM   COMBINE 67D AND 66C
              * KO     2
 985          HC       2
              *
1                                      HEC-1 INPUT                                          PAGE 25

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

 986          KK  67T66C
 987          KM   REACH CN-2 plus culvert CNC-2
 988          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM APPROX. 1/2 MILE SOUTH
              *  KM OF GUADALUPE ROAD TO THE INFLOW SPILLWAY FOR THE ELLIOT DETENTION BASIN.
 989          KM   OF GUADALUPE ROAD TO THE ELLIOT BASIN SPLITTER.
              *       Sta. 20+00 to Sta. 39+00
 990          RS       1    FLOW      -1
 991          RC    .032    .032    .032    1600  0.0035
 992          RX       0       6      12      24      64      76      82      88
 993          RY       4       3       2       0       0       2       3       4
              *
              * ADD DIVERSION OF FLOW TO SUBBASIN 67E FOR 404 REQUIREMENT (CWR 04/16/03)

 994          KK   DI67E
 995          KM   DIVERT LOW FLOW FOR 404 PERMIT TO SUBBASIN 67E
 996          DT    404A
 997          DI       0      24      76   10000
 998          DQ       0      24      76      76
              *
```

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                * BEGIN REVISIONS FOR ADDITION OF BASINS WA AND WB (CWR 12/04/02)

 999            KK    DI66
                * KM  DIVERT FLOW TO DETENTION BASIN WA
1000            KM    DIVERT FLOW TO ELLIOT DRAIN
1001            KM    By-pass Flow Reduced to 410 cfs from 458, SZ, 5-17-99
1002            KM   LAST DI/DQ VALUE INCREASED TO 2000/1590 FROM 1000/590 TO ADDRESS INCREASE EX
1003            KM   CONDITIONS Q (CWR 12/04/02)
                * KO     1       2
1004            DT    DSWA
1005            DI       0     150     363   411.0   456.0     513     577     643     712    2000
1006            DQ       0     150     363     410     410     410     410     410     410     410
                * DQ     0       0       0    32.0     71.     122     179     239     302    15
                *

1007            KK  RS66D1
                * KO     1
1008            KM   ELLIOT BASIN, WEST A
1009            KM   TWO PONDS OPERATING IN SERIES.
                * KM BASIN PICKS UP FLOWS FROM SUBBASIN 66C (CWR 11/25/02)
1010            KM        Bottom Elevation Lowered to 1415.0 ft from 1420, and 18" Bleed-off
1011            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
1012            RS       1    STOR       0
1013            SV       0    1.60   10.00   25.50   34.70   44.20   54.10   64.40   75.10   86.00
1014            SE  1415.0    1417    1419    1421    1422    1423    1424    1425    1426    1427
1015            SL  1416.0  1.7672     .62      .5
1016            SS  1423.5      20     3.0     1.5
                *
1                                       HEC-1 INPUT                                             PAGE 26

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

1017            KK    B-WA
1018            KM        Bleed-off Flow from WA to Elliot Channel = 18" Pipe, SZ, 6-15-99
1019            KM   DIVERT FLOWS TO ELLIOT DRAIN.  BY-PASS FLOWS TO BASIN WB (CWR 11/25/02)
                * 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
1020            DT    D-WA
1021            DI       0       5      10      15   17.59   40.87   80.62  131.76  192.12  260.43
1022            DQ       0       5      10      15   17.59   19.67   20.62   21.56   22.42   23.23
                * DQ     0       0       0       0       0    21.2    60.0   110.2   169.7   237
                *

1023            KK  RS66D2
                * KO     1
1024            KM   ELLIOT BASIN, WEST B
1025            KM   TWO PONDS OPERATING IN SERIES.
1026            KM        Bottom Elevation Lowered to 1413.5 ft from 1414, and 36" Bleed-off
1027            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
1028            RS       1    STOR       0
1029            SV       0    4.40    8.80   14.50   21.00   28.00   35.30   42.90   50.90   59.20
1030            SE  1412.0    1415    1416    1417    1418    1419    1420    1421    1422    1423
1031            SL  1413.0  1.7672     .62      .5
1032            SS  1422.6      50     2.5     1.5
                *

1033            KK    B-WB
1034            KM   DIVERT FLOWS TO ELLIOT DRAIN.  BY-PASS FLOWS TO ELLIOT ROAD (CWR 12/03/02)
1035            DT    D-WB
1036            DI       0       5      10      15      28      30     100     200     400     800
1037            DQ       0       5      10      15      28      28      28      28      28      28
                *
                *
                * DDM   ***** Preserved *****

1038            KK   66CTD
1039            KM   ROUTE OVERFLOW FROM BASIN WB IN SHALLOW DITCH ALONG ELLIOT ROAD
1040            RS       1    FLOW      -1
1041            RC     .03     .03    .035    1320    .004
1042            RX       0       5      10      25      30      38      45      80
1043            RY     1.6     1.6     1.5       0       0     1.6     1.6     1.7
                *
                * DDM   ***** Updated *****

1044            KK     66D
1045            KM   BASIN 66D
1046            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1047            KM    L=      1.0  Lca=        .7   S=   28.6  Kn= .090  LAG=  59.4
1048            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1049            BA     .31
1050            LG     .35     .36    6.80     .11     .00
1051            UI     18.     18.     28.     62.     78.     91.    102.    115.    132.    155.
1052            UI    200.    224.    184.    158.    141.    123.    107.     93.     82.     62.
1                                       HEC-1 INPUT                                             PAGE 27

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

1053            UI     43.     31.     29.     27.     18.     18.     12.      5.      5.      5.
1054            UI      5.      5.      5.      5.      5.      0.      0.      0.      0.      0.
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1055          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              * DDM   ***** Preserved *****
              *

1056          KK    C66D
1057          KM   COMBINE 66D AND OVERFLOW FROM BASIN WB
1058          HC       2
              *
              * DDM   ***** Preserved *****
              *

1059          KK  4THDIV
1060          KM   DIVERT OCCURS NEAR STATION 11+00 OF WOOD PATEL PLANS. THIS DIVERT REPRESENTS
1061          KM   THE FLOW GOING TO THE EXPANDED STUBOUT WHICH WAS 60IN. AND IS NOW 82IN.
1062          KM   CAPACITY IS 300 CFS BUT THE DIVERT WILL BE MODELED AS 100 CFS SINCE THE
1063          KM   ELLIOT PIPE SYSTEMS CAPACITY IS AROUND 1100 CFS
1064          DT  STUBDI
1065          DI       0     180     200     300     500    1000    1200    1400    1600    1800
1066          DQ       0     180     180     180     180     180     100     100     100     180
              * DI     0   10000
              * DQ     0   10000
              *

1067          KK    CP66
1068          KM   COMBINE FLOWS FROM C66D AND C65
1069          HC       2
              *

1070          KK  66DT70
              * KM ROUTE 66D TO 70A VIA GM CHANNEL. WASH N AND W OF GMPG INCLUDING CHANNEL
              * KM FLOWS CROSSING ELLSWORTH SOUTH OF ELLIOT
1071          KM   ROUTE NOT NECESSARILY VIA GM CHANNEL ANYMORE BUT ALONG SAME GENERAL
1072          KM   ALIGNMENT TO THE SOUTHWEST TOWARD SUBBASIN 70A
1073          RS       3    FLOW      -1
1074          RC    .055    .045    .055    3500   .0054
1075          RX       0     100     950    1050    1060    1163    1663    2000
1076          RY       5       4       3       0       0       3       4       5
              *

1077          KK  RECPIP
1078          KM   RECALL THE PIPE FLOW OF 500 CFS THAT WAS DIVERTED AT CP65B, APPROX .52 MILES
1079          KM   EAST OF CRISMON. FLOWS ARE ROUTED IN A PIPE OF FROM 78IN TO 114IN FOR A
1080          KM   DISTANCE OF APPOX. 9,425 FEET. OVERALL SLOPOE IS APPROX FROM WOOD-PATEL
1081          KM   DRAWINGS AND 9.5 FT DIAMTER IS THE LARGEST PIPE SIZE.
1082          DR    PIPE
              *

1083          KK  ROPIPE
1084          KM   ROUTE THE PIPE FLOW IN THE ELLIOT ROAD PIPE SYSTEM TO SUBBASIN 7OA
1085          KM   THIS ROUTING WILL ROUTE THE 500 CFS FLOW IN A 90" PIPE TO THE FIRST LOW FLOW
1086          KM   CROSSING AT STA 69+80, FLOW STARTED AT 90+15
1087          RD    2035   .0064    .013            CIRC     7.5
              * RD  9425    .005    .013            CIRC     9.5
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1088          KK  ROPIP2
1089          KM   ROUTE THE FLOW IN THE ELLIOT ROAD PIPE SYSTEM FROM STA 69+80 TO STA 65+05
1090          KM   FLOW WILL BE ROUTED IN A PIPE OF 114" DIAMETER. ROUTE DISTANCE IS 475 FT
1091          KM   HOWEVER TO AVOID AN ERROR THE ROUTE DISTANCE WAS EXTENDED TO 2000 FT
1092          RD    2000   .0048    .013            CIRC     9.5
              *
              * KKREELL2
              * KM RECALL THE 250 CFS DIVERT AT STA 65+05
              * DR ELLI2
              *

1093          KK  REWASP
1094          KM   RECALL THE 410 CFS DIVERT FROM THE CRISMON CHANNEL SPLITTER
1095          DR    DSWA
              *

1096          KK  CPIPE2
1097          KM   COMBINE PIPE FLOWS IN THE ELLIOT ROAD PIPE SYSTEM AT STA 65+05
1098          HC       2    4.34
              *

1099          KK  ROPIP3
1100          KM   ROUTE THE FLOW IN THE ELLIOT ROAD PIPE SYSTEM FROM STA 65+05 TO 11+00,
1101          KM   A DISTANCE OF 5405 FT AT THAT POINT IT WILL PICK UP THE DIVERT FROM 82IN.
1102          KM   ELLIOT/ELLSWORTH PIPE STUBOUT
1103          KM   OVERALL SLOPE OF .0025 FROM EXAMINATION OF DRAWINGS. PIPE SIZE IS 114"
1104          RD    5405   .0025    .013            CIRC     9.5
              *

1105          KK  RED-WA
1106          KM   RECALL THE OUTFLOW FROM BASIN WA
1107          DR    D-WA
              *

1108          KK  RED-WB
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1109          KM   RECALL THE OUTFLOW FROM BASIN WB
1110          DR    D-WB
              *

1111          KK  CPIPWA
1112          KM   COMBINE PIPE FLOWS IN THE ELLIOT ROAD PIPE SYSTEM AT STA 65+00 + OUTFLOW
1113          KM   FROM BASIN WA (OUTFLOW FROM BASIN WA NOT ROUTED SINCE SUCH A SHORT DISTANCE
1114          KM   AND NO ATTENUATION IS ANTICIPATED)
1115          HC       3    4.34
              *

1116          KK  RESTUB
1117          KM   RECALL THE 100 CFS DIVERSION FOR THE ELLIOT STUBOUT AT THE NORTHWEST CORNER
1118          KM   ELLIOT AND ELLSWORTH ROADS.
1119          DR  STUBDI
              *
1                                        HEC-1 INPUT                                          PAGE 29

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


1120          KK  CPIPE3
1121          KM   COMBINE THE FLOW COMING FROM THE EAST IN THE ELLIOT PIPE WITH THE RECALLED
1122          KM   FLOW OF 100 CFS FROM THE 82IN. PIPE STUBOUT. COMBINE OCCURS AT STA 11+00
1123          HC       2    4.34
              *

1124          KK  ROPIP4
1125          KM   ROUTE THE FLOW IN THE ELLIOT PIPE SYSTEM FROM STA 11+00 TO ITS OUTLET AT
1126          KM   STA 99+05 OF THE ELLSWORTH ROAD SYSTEM. THE DISTANCE WILL BE APPROX. 105 FT
1127          KM   THE MODEL BOMBS AT A DISTANCE OF 105 FEET, INCREASED TO 1000 FEET
1128          KM   PIPE SIZE IS 102 INCHES
              * RD   105   .0015    .013            CIRC     8.5
1129          RD    1000   .0015    .013            CIRC     8.5
              *

1130          KK  C_FLOW
1131          KM   Combined Flow at the Culvert under Ellsworth Road
1132          HC       2
              *

1133          KK  66T70A
1134          KM   ROUTE THE FLOW FROM THE Culvert OUTLET TO Santan Channel in 7OA
1135          RS       2    FLOW      -1
1136          RC    .055    .045    .055    1200   .0054
1137          RX       0     100     950    1050    1060    1163    1663    2000
1138          RY       5       4       3       0       0       3       4       5
              *
              * DDM   ***** Updated *****
              * RETURN DIVERT FROM CRISMON CHANNEL FOR 404 PERMIT (CWR 04/16/03)

1139          KK    RD66
1140          KM    RETURN DIVERT FROM CRISMON CHANNEL FOR 404 PERMIT REQUIREMENTS
1141          DR    404A
              *
              * ROUTE FLOW FROM DIVERSION IN NATURAL WASH (CWR 04/16/03)

1142          KK  RT404A
1143          KM   ROUTE FLOW FROM DIVERSION IN NATURAL WASH
1144          RS       8    FLOW      -1
1145          RC   0.045   0.040   0.045    5300   0.007
1146          RX       0     500    1000    1003    1053    1056    1511    2011
1147          RY       4     3.5       3       0       0       2     2.5       3
              *

1148          KK     67EBASIN
1149          KM   BASIN 67E
1150          KM   BASIN UPDATED FOR LANDUSE FOR THE ADOT SANTAN PROJECT
1151          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1152          KM    L=      1.2  Lca=       .7   S=   32.3  Kn= .090  LAG=  63.6
1153          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1154          BA   0.583
1155          LG    0.33    0.34    5.40    0.19       5
1156          UI      35      36      74     132     170     195     219     258     294     384
1157          UI     460     378     323     287     243     212     183     151     110      67
1                                        HEC-1 INPUT                                          PAGE 30

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

1158          UI      60      59      37      36      25      11      11      11      12      11
1159          UI      11      11       0       0       0       0       0       0       0       0
1160          UI       0       0       0       0       0       0       0       0       0       0
              *

1161          KK    D67E
1162          KM   DIVERSION FOR RETENTION
1163          DT  DIV67E      16
1164          DI       0   10000
1165          DQ       0   10000
              *
              * COMBINE FLOWS FROM 404 DIVERSION WITH FLOWS FROM SUBBASIN 67E

1166          KK   CP67E
1167          KM   COMBINE FLOWS FROM 404 DIVERSION WITH FLOWS FROM SUBBASIN 67E
1168          HC       2
```

```
                *
                *
                * DDM   ***** Preserved *****

1169            KK   67T68
1170            KM    ROUTE S67 TO S68 VIA WASH
1171            RS       5    FLOW      -1
1172            RC    .045     .04    .045    2500   .0068
1173            RX       0     500     950    1003    1007    1057    1511    2011
1174            RY       4     3.5       3       0       0       2     2.5       3
                *
                *  DDM   ***** Updated *****

1175            KK     62A
1176            KM   BASIN 62A
1177            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1178            KM    L=       .8  Lca=       .5   S=   30.0  Kn= .092  LAG=  46.9
1179            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1180            BA     .38
1181            LG     .46     .25    4.50     .55    8.00
1182            UI     27.     27.     82.    117.    143.    165.    195.    239.    329.    310.
1183            UI    250.    215.    180.    152.    128.     91.     56.     46.     41.     27.
1184            UI     26.      8.      8.      8.      8.      8.      8.      8.      0.      0.
1185            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                * DDM   ***** Preserved *****
                *

1186            KK   62ATC
1187            KM   ROUTE 62A TO 62C BY A CHANNEL ALONG SANTAN FWY
1188            RS       1    FLOW      -1
1189            RC    .040    .016    .040    5280   .0033
1190            RX      69      74      86     100     112     126     138     143
1191            RY       9     7.2       7       0      .5       7     7.2       9
                *
1                                       HEC-1 INPUT                                                 PAGE 31

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


1192            KK     62CBASIN
1193            KM   BASIN 62C
1194            KM   BASIN UPDATED FOR LANDUSE FOR ADOT SANTAN FWY CHANNEL PROJECT
1195            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1196            KM    L=       .6  Lca=       .3   S=   24.2  Kn= .080  LAG=  32.3
1197            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1198            BA   0.546
1199            LG    0.30    0.30    4.65    0.31      13
1200            UI      64     169     310     398     547     770     587     458     344     230
1201            UI     117      88      62      20      19      19      20       0       0       0
1202            UI       0       0       0       0       0       0       0       0       0       0
1203            UI       0       0       0       0       0       0       0       0       0       0
                *

1204            KK    D62C
1205            KM    DIVERT FOR RETENTION VOLUME
1206            DT  DIV62C      17
1207            DI       0   10000
1208            DQ       0   10000
                *
                * DDM   ***** Preserved *****
                *  KK  C62C

1209            KK   CP62C
1210            KM   COMBINE FLOW FROM BASIN 62A AND 62C
1211            HC       2
                *

1212            KK   62CTE
1213            KM   ROUTE BASIN 62C TO BASIN 62E BY CHANNEL ON EAST SIDE OF PROPOSED SANTAN FRWY
1214            RS       1    FLOW      -1
1215            RC    .040    .016    .040    2000   .0040
1216            RX      67      72      84     100     112     128     140     145
1217            RY      10     8.2       8       0      .5       8     8.2      10
                *
                * DDM   ***** Updated *****

1218            KK     62E
1219            KM   BASIN 62E
1220            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1221            KM    L=       .6  Lca=       .3   S=   31.9  Kn= .088  LAG=  35.9
1222            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1223            BA     .15
1224            LG     .34     .35    4.65     .28    2.00
1225            UI     14.     26.     59.     77.     94.    119.    173.    154.    121.     98.
1226            UI     78.     59.     33.     24.     18.     14.      5.      4.      4.      4.
1227            UI      4.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1228            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                * DDM   ***** Preserved *****
                *  KK  CP62
1                                       HEC-1 INPUT                                                 PAGE 32

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1229          KK   C62CE
1230          KM   COMBINE FLOWS FROM SUBBASIN 62C AND 62E
1231          HC       2
              *
              * DDM   ***** Updated *****

1232          KK     61ABASIN
1233          KM   BASIN 61A
1234          KM   SUBBASIN UPDATED FOR LANDUSE FOR ADOT SANTAN CHANNEL PROJECT
1235          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1236          KM    L=       .9  Lca=       .4   S=   36.8  Kn= .078  LAG=  40.3
1237          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1238          BA   0.519
1239          LG    0.35    0.28    4.20    0.51      12
1240          UI      45      74     178     235     287     349     484     564     427     350
1241          UI     287     229     163      92      76      53      46      14      14      14
1242          UI      14      14       0       0       0       0       0       0       0       0
1243          UI       0       0       0       0       0       0       0       0       0       0
              *

1244          KK    D61A
1245          KM   DIVERT FOR DEVELOPED LAND WITHIN SUBBASIN BOUNDARIES
1246          KM   DIVERT BASED UPON VOLUME EQUATION OF FCD HYDROLOGY MANUAL PAGE 3-7
1247          KM   IN CASES WHERE MORE THAN ONE TYPE OF DEVELOPED LANDUSE EXISTS, THE C COEFF
1248          KM   WAS AREA AVERAGED FOR USE IN THE FORMULA. RETENTION VOLUME IS BASED UPON
1249          KM   80% EFFECTIVENESS OF THE PURE CALCULATED VOLUME
1250          DT  DIV61A    14.5
1251          DI       0   10000
1252          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1253          KK   61ATB
1254          KM   ROUTING 61A TO 61B VIA ELLSWORTH ROAD
1255          RS       8    FLOW      -1
1256          RC    .035    .024    .035    5280    .008
1257          RX       0     500     750     752     802     852    1102    1602
1258          RY       3       2     1.5     1.2     1.2     1.5       2       3
              *
              * DDM   ***** Updated *****

1259          KK     61BBASIN
1260          KM   BASIN 61B
1261          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1262          KM    L=      1.4  Lca=       .7   S=   39.7  Kn= .099  LAG=  70.8
1263          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1264          BA   1.092
1265          LG    0.39    0.26    4.80    0.43       7
1266          UI      68      68     148     257     331     375     423     504     580     766
1267          UI     868     693     595     528     445     385     337     263     176     122
1268          UI     112      97      68      68      28      21      21      20      21      21
1269          UI      21      21       0       0       0       0       0       0       0       0
1270          UI       0       0       0       0       0       0       0       0       0       0
1271          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                        HEC-1 INPUT                                                PAGE 33

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


1272          KK    D61B
1273          KM   DIVERSION TO ACCOUNT FOR DEVELOPMENT
1274          DT  DIV61B      45
1275          DI       0   10000
1276          DQ       0   10000
              *
              * DDM   ***** Preserved *****

1277          KK   CP61B
1278          KM   COMBINE FLOWS FROM S61A AND S61B
1279          HC       2
              *

1280          KK  61T62E
1281          KM    ROUTE S61B TO S62E. WASH CROSSING ELLSWORTH AT STAFF GAUGE
1282          RS       2    FLOW      -1
1283          RC    0.45    0.04    0.45    3500  0.0057
1284          RX       0     500     980    1006    1012    1035    1515    2015
1285          RY       5     4.5       4       0       0       4     4.5       5
              *
              * DDM   ***** Preserved *****

1286          KK   CP62E
1287          KM   COMBINE FLOWS FROM SUBBASIN 62C, 61B AND SUBBASIN 62E
              * KO     1
1288          HC       2
              *

1289          KK  62T68A
1290          KM   ROUTE FLOW FROM CP62E TO SUBBASIN 68A BY CHANNEL ALONG PROPOSED ALIGNMENT
1291          KM   OF SANTAN FREEWAY
1292          RS       2    FLOW      -1
1293          RC    .040    .016    .040    3280   .0035
1294          RX      67      72      84     100     112     128     140     145
```

```
1295          RY      10     8.2       8       0      .5       8     8.2      10
              *
              *

1296          KK    68A1   BASIN
1297          KM   BASIN 68A1
1298          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1299          KM    L=0.92  Lca=0.46  S=37.7  Kn=0.087  LAG=45.3
1300          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1301          BA   0.297
1302          LG    0.34    0.38    5.70    0.18       3
1303          UI      22      22      72      98     122     139     165     218     276     233
1304          UI     195     164     136     116      92      56      39      36      25      22
1305          UI      11       7       7       6       7       7       7       0       0       0
1306          UI       0       0       0       0       0       0       0       0       0       0
1307          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                       HEC-1 INPUT                                          PAGE 34

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


1308          KK  CP68A1 COMBINE
1309          KM    COMBINE FLOWS FROM 67T68,62T68A, 68A1
1310          HC       3
              *
              *

1311          KK    68A2   BASIN
1312          KM   BASIN 68A2
1313          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1314          KM    L=0.50  Lca=0.25  S=37.8  Kn=0.087  LAG=28.5
1315          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1316          BA   0.048
1317          LG    0.35    0.38    5.70    0.18       3
1318          UI       5      16      28      37      50      69      51      39      30      18
1319          UI      10       7       4       2       2       2       2       0       0       0
1320          UI       0       0       0       0       0       0       0       0       0       0
1321          UI       0       0       0       0       0       0       0       0       0       0
1322          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1323          KK  CP68A2 COMBINE
1324          KM    COMBINE FLOWS FROM CP68A1 AND 68A2
1325          HC       2
              *
              *

1326          KK  68T70A
1327          KM   ROUTE FLOW FROM CP68A AT ELLIOT AND ANTAN FREEWAY ALIGNMENT TO SUBBASIN 70A,
1328          KM   AT THE POINT WHERE SIPHON DRAW INTERSECT THE FREEWAY ALIGNMENT. CHANNEL IS
1329          KM   NATURAL AND ONLY APPROXIMATE IN ROUTING PARAMETERS
1330          RS       3    FLOW      -1
1331          RC    .030    .030    .030    3960   .0006
1332          RX       0       5      10      20      30      40      45      50
1333          RY      15       5       4       0       0       4       5      15
              *
              *

1334          KK    70A1   BASIN
1335          KM   BASIN 70A1
1336          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1337          KM    L=0.52  Lca=0.26  S=3.8  Kn=0.030  LAG=15.7
1338          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1339          BA   0.053
1340          LG    0.10    0.25    5.70    0.29      80
1341          UI      18      61     106     110      65      29      13       3       4       0
1342          UI       0       0       0       0       0       0       0       0       0       0
1343          UI       0       0       0       0       0       0       0       0       0       0
1344          UI       0       0       0       0       0       0       0       0       0       0
1345          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


1346          KK      23   BASIN
1347          KM   BASIN 23
1348          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1349          KM    L=0.78  Lca=0.36  S=17.9  Kn=0.089  LAG=45.7
1350          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1351          BA   0.218
1352          LG    0.35    0.36    6.80    0.11       0
1353          UI      16      16      51      72      87     100     120     153     202     173
1354          UI     143     123     101      85      69      46      29      26      19      16
1355          UI      10       5       5       5       5       5       5       0       0       0
1356          UI       0       0       0       0       0       0       0       0       0       0
1357          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
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1358          KK  CP70A1 COMBINE
1359          KM    COMBINE FLOWS FROM 66T70A, 68T70A, 70A1, AND 23
1360          HC       4
              *
              *

1361          KK  70A1T2
1362          KM   ROUTE FLOW ALONG LOOP 202 WITHIN THE EAST CHANNEL FROM MESQUITE ROAD TO
1363          KM   WARNER ROAD.
1364          RS       2    FLOW      -1
1365          RC    .025    .025    .025    2675  0.0005
1366          RX       0       8      16      59      91     134     142     150
1367          RY     7.4     7.3     7.2       0       0     7.2     7.1     7.0
              *
              *

1368          KK    70A2   BASIN
1369          KM   BASIN 70A2
1370          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1371          KM    L=0.51  Lca=0.26  S=19.6  Kn=0.030  LAG=11.4
1372          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1373          BA   0.036
1374          LG    0.10    0.15    8.40    0.10      80
1375          UI      25      77     106      49      15       4       0       0       0       0
1376          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1377          KK      24   BASIN
1378          KM   BASIN 24
1379          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1380          KM    L=0.83  Lca=0.38  S=24.1  Kn=0.089  LAG=45.2
1381          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1382          BA   0.252
1383          LG    0.35    0.36    6.80    0.11       0
1384          UI      19      19      61      84     102     119     140     189     235     197
1385          UI     164     138     116      97      77      48      33      31      20      19
1386          UI       9       5       6       6       6       5       0       0       0       0
1387          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

1388          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1389          KK  CP70A2
1390          KM   COMBINE FLOWS FROM 70A1T2 AND BASINS 24 AND 70A2
1391          KM
1392          HC       3
              *
              *

1393          KK  70T76A
1394          KM   DIBBLE DRAINAGE FACILITY
1395          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT
1396          KM   REACH ET-3A, ET-3B
1397          RS       3    FLOW      -1
1398          RC    .025    .025    .025    4500  0.0005
1399          RX       0       8      16      59      91     134     142     150
1400          RY     7.4     7.3     7.2       0       0     7.2     7.1     7.0
              *
              *
              * DDM   ***** Updated *****

1401          KK     76A
1402          KM   BASIN 76A
1403          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1404          KM    L=      3.0  Lca=      1.8   S=   23.0  Kn= .090  LAG= 135.0
1405          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
              *  KO                                    21
1406          BA    1.91
1407          LG     .35     .27    8.80     .05     .00
1408          UI     48.     48.     48.     48.     48.     48.    134.    157.    180.    193.
1409          UI    219.    232.    248.    261.    273.    287.    302.    321.    343.    362.
1410          UI    379.    418.    466.    549.    560.    643.    593.    537.    495.    463.
1411          UI    433.    412.    391.    374.    353.    329.    309.    292.    277.    257.
1412          UI    241.    230.    219.    186.    170.    137.    130.     84.     84.     84.
1413          UI     81.     78.     78.     78.     53.     48.     48.     48.     48.     48.
1414          UI     27.     15.     15.     15.     15.     15.     15.     15.     15.     15.
1415          UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
1416          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1417          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1418          KK    C76A
1419          KM   COMBINE SANTAN FREEWAY CHANNEL FLOWS WITH SUBBASIN 76A
1420          HC       2
              *

1421          KK  76ATPR
1422          KM   DIBBLE DRAINAGE FACILITY
1423          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT TO NEW POWERLINE FLOODWAY ALGN.
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1424          KM   REACH ET-2A, ET-2B
1425          KM   THE ROUTING IS TAKING FLOW VIA THE SANTAN FWY CHANNEL, NOT VIA THE NEW
1426          KM   POWERLINE FLOODWAY ALIGNMENT
1                                      HEC-1 INPUT                                                PAGE 37

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

1427          KO                                    21
1428          RS       3    FLOW      -1
1429          RC    .025    .025    .025    5750   .0005
1430          RX       0       8      16      61      93     138     146     154
1431          RY    10.7     7.6     7.5       0       0     7.5     7.4    10.7
              *

1432          KK  EMFSTN
1433          KM   COMBINE FLOWS IN EMF AT Santan Road
1434          HC       2
              *

1435          KK  KNXTRY
1436          KM   ROUTE EMF KNOX ROAD FLOW TO RAY ROAD
1437          RS       1    FLOW      -1
1438          RC     .03    .022     .03    3000   .0003
1439          RX       0     500     520     553     693     726     740     742
1440          RY      14      12      11       0       0      11      11      12
              *
              *
              *
              *
              *  THE PARAMETERS FOR MANY OF THE SUB-BASINS FROM THIS POINT ON IN THE MODEL
              *  WERE REVISED BY DIBBLE UNDER THE ELLSWORTH ROAD CHANNEL DESIGN PROJECT (2002)
              * ****************SUB-BASIN 73A - NO CHANGE DM**********************************

1441          KK     73A   BASIN
1442          KM   BASIN 73A
1443          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1444          KM    L=      2.3  Lca=      1.0   S=   34.9  Kn= .093  LAG=  94.5
1445          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1446          BA   0.947
1447          LG    0.35    0.36    5.00    0.28       0
1448          UI      32      33      33      32      70     108     125     149     159     174
1449          UI     188     198     215     238     250     278     329     383     430     393
1450          UI     344     311     291     267     250     232     210     194     180     163
1451          UI     152     132     108      94      59      57      55      54      53      39
1452          UI      33      33      32      29      10      10      10      10      10      10
1453          UI      10       0       0       0       0       0       0       0       0       0
1454          UI       0       0       0       0       0       0       0       0       0       0
              *
              * *****************UPDATED SECTION 11-29-07 DM**********************************
              *

1455          KK   73ATB   ROUTE
1456          KM   ROUTE 73A TO 73B
1457          RS       2    FLOW      -1
1458          RC   0.045   0.040   0.045    2830  0.0050    0.00
1459          RX    0.00    5.00   10.00   20.00  120.00  130.00  135.00  140.00
1460          RY    2.50    2.50    2.50    0.00    0.00    2.50    2.50    2.50
              *
1                                      HEC-1 INPUT                                                PAGE 38

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


1461          KK     73B   BASIN
1462          KM   BASIN 73B
1463          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1464          KM    L=0.56  Lca=0.28   S=30.4  Kn=0.040  LAG=14.9
1465          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1466          LG    0.25    0.25    5.40    0.27      30
1467          UI     169     530     973     829     481     180      73      30       0       0
1468          UI       0       0       0       0       0       0       0       0       0       0
              *

1469          KK  RET73B  DIVERT
1470          KM   80% OF THE COMBINED RETENTION VOLUMES FROM MOUNTAIN RANCH, MOUNTAIN HEIGHTS,
1471          KM   AND STRATSFORD ESTATES PER APPROVED DRAINAGE REPORTS.
1472          DT  73BRET    39.5     0.0
1473          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1474          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

1475          KK   CP73B COMBINE
1476          KM   COMBINE BASIN 73B AND ROUTE 73ATB
1477          HC       2
              *

1478          KK   73BTC   ROUTE
1479          KM   ROUTE 73B TO 73C
1480          RS       4    FLOW      -1
1481          RC   0.045   0.040   0.045    4500  0.0050    0.00
1482          RX    0.00    5.00   10.00   22.00  122.00  134.00  139.00  144.00
1483          RY    3.00    3.00    3.00    0.00    0.00    3.00    3.00    3.00
              *

1484          KK     73C   BASIN
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1485          KM   BASIN 73C
1486          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1487          KM    L=1.30  Lca=0.65   S=23.1  Kn=0.040  LAG=29.8
1488          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1489          BA   0.585
1490          LG    0.25    0.25    5.40    0.27      30
1491          UI      88     344     512     764    1019     695     488     287     149      88
1492          UI      31      27      26       0       0       0       0       0       0       0
1493          UI       0       0       0       0       0       0       0       0       0       0
              *

1494          KK  RET73C  DIVERT
1495          KM   80% OF THE COMBINED RETENTION VOLUMES FROM NOVA VISTA AND MOUNTAIN HORIZONS
1496          KM   (NORTH) PER APPROVED DRAINAGE REPORTS.
1497          DT  73CRET    37.2     0.0
1498          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1499          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *
1                                       HEC-1 INPUT                                          PAGE 39

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


1500          KK   CP73C COMBINE
1501          KM   COMBINE SUB-BASIN 73C AND ROUTE 73BTC
1502          HC       2
              *

1503          KK  73T74C   ROUTE
1504          KM   ROUTE 73C TO 74C
1505          RS      11    FLOW      -1
1506          RC   0.035   0.030   0.035    4880  0.0028    0.00
1507          RX    0.00   50.00  100.00  108.00  168.00  176.00  226.00  276.00
1508          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
              *
              * **********************SUB-BASIN 74A - NO CHANGE 11-29-07 DM*******************

1509          KK     74A   BASIN
1510          KM   BASIN 74A
1511          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1512          KM    L=      2.4  Lca=      1.0   S=   42.2  Kn= .095  LAG=  92.9
1513          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1514          BA   0.754
1515          LG    0.35    0.36    5.00    0.28       0
1516          UI      26      27      26      27      62      90     102     124     132     143
1517          UI     154     165     178     196     210     238     291     320     342     303
1518          UI     268     243     228     212     196     178     163     152     138     125
1519          UI     114      98      75      57      47      46      43      44      35      26
1520          UI      27      26      25       9       8       8       8       8       8       8
1521          UI       9       0       0       0       0       0       0       0       0       0
1522          UI       0       0       0       0       0       0       0       0       0       0
              * ******************SECTION UPDATED 11-29-07 DM*********************************
              *

1523          KK   74ATB   ROUTE
1524          KM   ROUTE FLOW FROM BASIN 74A VIA THE POWERLINE FLOODWAY FROM MERIDIAN ROAD TO
1525          KM   MOUNTAIN ROAD. FLOW ENTERS THE POWERLINE FLOODWAY VIA A 75FT WEIR ON THE
1526          KM   NORTHWEST CORNER OF THE MERIDIAN ROAD AND POWERLINE FLOODWAY INTERSECTION.
1527          RS       1    FLOW      -1
1528          RC   0.013   0.013   0.013    3200  0.0060    0.00
1529          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
1530          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
              *

1531          KK     74B   BASIN
1532          KM   BASIN 74B
1533          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1534          KM    L=1.10  Lca=0.55   S=28.2  Kn=0.040  LAG=25.2
1535          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1536          BA   0.333
1537          LG    0.25    0.25    5.80    0.22      30
1538          UI      45     154     245     330     528     430     318     229     122      76
1539          UI      44      18      14      14       0       0       0       0       0       0
1540          UI       0       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


1541          KK  RET74B  DIVERT
1542          KM   80% OF THE COMBINED RETENTION VOLUMES FROM GILA RIVER RANCHES AND STRATSFORD
1543          KM   ESTATES PER APPROVED DRAINAGE REPORTS.
1544          DT  74BRET    17.8     0.0
1545          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1546          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

1547          KK   CP74B COMBINE
1548          KM   COMBINE BASIN 74B AND ROUTE 74ATB
1549          HC       2
              *

1550          KK   74BTC   ROUTE
1551          KM   ROUTE FLOW VIA THE POWERLINE FLOODWAY FROM MOUNTAIN ROAD TO SIGNAL BUTTE
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1552          KM   ROAD.
1553          RS       1    FLOW      -1
1554          RC   0.013   0.013   0.013    3100  0.0055    0.00
1555          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
1556          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
              *

1557          KK     74C   BASIN
1558          KM   BASIN 74C
1559          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1560          KM    L=1.22  Lca=0.40   S=25.4  Kn=0.040  LAG=23.7
1561          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1562          BA   0.345
1563          LG    0.25    0.17    6.80    0.15      30
1564          UI      48     180     276     386     588     428     310     211      97      65
1565          UI      35      15      15      16       0       0       0       0       0       0
1566          UI       0       0       0       0       0       0       0       0       0       0
              *

1567          KK  RET74C  DIVERT
1568          KM   80% OF THE COMBINED RETENTION VOLUMES FROM MOUNTAIN HORIZONS (NORTH)PER
1569          KM   APPROVED DRAINAGE REPORTS.
1570          DT  74CRET    22.6     0.0
1571          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1572          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

1573          KK   CP74C COMBINE
              * KO     2
1574          KM   COMBINE BASIN 74C AND ROUTES 73CT74C AND 74BTC
1575          HC       3
              *

1576          KK  74CT75   ROUTE
1577          KM    ROUTE CP74C TO S75 VIA POWERLINE FLOODWAY. Vel of 10 ft/sec for NSTP calc.
1578          RS       3    FLOW      -1
1579          RC   0.030   0.013   0.030   10700  0.0047    0.00
1580          RX    0.00    5.60   20.10   30.00   39.00   49.90   69.40   75.00
1581          RY    6.25    7.25    7.25    0.00    0.00    7.25    7.25    6.25
              *
              *
1                                        HEC-1 INPUT                                                    PAGE 41

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

1582          KK      75   BASIN
1583          KM   BASIN 75
1584          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1585          KM    L=      4.0  Lca=      3.0   S=   20.0  Kn= .087  LAG= 182.3
1586          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1587          BA   4.005            0.25
1588          LG    0.34    0.35    6.80    0.13       3
1589          UI      74      74      74      73      75      73      74      75     177     242
1590          UI     247     283     283     335     339     360     377     396     408     424
1591          UI     436     453     477     492     515     554     559     580     624     666
1592          UI     726     823     864     916    1012     934     871     820     760     724
1593          UI     699     661     637     620     592     573     554     521     496     473
              *

1594          KK    CP75 COMBINE
1595          KM   COMBINE BASIN 75 AND ROUTE 74CT75
              * KO     2
1596          HC       2
              *
              *

1597          KK   75TCP
1598          KM   ROUTE 75 THROUGH POWERLINE FLOODWAY TO AIR FORCE CHANNEL
1599          RS       1    FLOW      -1
1600          RC     .03    .013     .03    6000   .0041
1601          RX       0    1005    1023  1030.5  1036.5    1044    1062    2067
1602          RY       6       5       5       0       0       5       5       6
              * *****************SUB-BASIN 77A - NO CHANGE 11-29-07 DM************************

1603          KK     77A   BASIN
1604          KM   BASIN 77A
1605          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1606          KM    L=      2.9  Lca=      1.5   S=   31.1  Kn= .092  LAG= 119.0
1607          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1608          BA   1.739
1609          LG    0.35    0.36    5.00    0.28       0
1610          UI      49      50      48      49      50     108     162     186     204     229
1611          UI     246     262     277     297     308     332     362     377     404     467
1612          UI     538     576     666     601     537     499     460     427     410     385
1613          UI     361     335     310     292     275     251     237     229     187     160
1614          UI     142     104      87      87      83      81      81      72      49      50
1615          UI      49       0       0       0       0       0       0       0       0       0
1616          UI       0       0       0       0       0       0       0       0       0       0
1617          UI       0       0       0       0       0       0       0       0       0       0
1618          UI       0       0       0       0       0       0       0       0       0       0
              * ******************SECTION UPDATED 11-29-07 DM*********************************
              *

1619          KK   77ATB   ROUTE
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1620          KM   ROUTE BASIN 77A THROUGH THE KEIGHLEY PLACE SUBDIVISION FROM MERIDIAN ROAD TO
1621          KM   TO MOUNTAIN ROAD.
1622          RS       1    FLOW      -1
1623          RC   0.045   0.040   0.045    3000  0.0050    0.00
1624          RX    0.00    5.00   10.00   37.00   47.00   74.00   79.00   84.00
1                                        HEC-1 INPUT                                                PAGE 42

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

1625          RY    5.50    5.00    4.50    0.00    0.00    4.50    5.00    5.50
              *

1626          KK     77B   BASIN
1627          KM   BASIN 77B
1628          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1629          KM    L=0.56  Lca=0.26   S=28.6  Kn=0.077  LAG=28.2
1630          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1631          BA   0.349
1632          LG    0.19    0.30    5.40    0.30      18
1633          UI     100     337     536     757     486     273     113      54      20      21
1634          UI       0       0       0       0       0       0       0       0       0       0
              *

1635          KK  RET77B  DIVERT
1636          KM   80% OF THE COMBINED RETENTION VOLUMES FROM GILA RIVER RANCHES AND KEIGHLEY
1637          KM   PLACE PER APPROVED DRAINAGE REPORTS.
1638          DT  77BRET     6.4     0.0
1639          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1640          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

1641          KK   CP77B COMBINE
1642          KM   COMBINE FLOW FROM BASIN 77B AND ROUTE 77ATB
1643          HC       2
              *

1644          KK   77BTC   ROUTE
1645          KM   ROUTE FLOW THROUGH THE MOUNTAIN HORIZONS (SOUTH) DEVELOPEMENT FROM MOUNTAIN
1646          KM   ROAD TO SIGNAL BUTTE ROAD.
1647          RS      11    FLOW      -1
1648          RC   0.045   0.040   0.045    4750  0.0042    0.00
1649          RX    0.00    5.00   10.00   20.00   85.00  105.00  110.00  115.00
1650          RY    5.00    4.00    3.00    0.00    0.00    3.00    4.00    5.00
              *

1651          KK     77C   BASIN
1652          KM   BASIN 77C
1653          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1654          KM    L=0.76  Lca=0.51   S=23.7  Kn=0.040  LAG=22.0
1655          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1656          BA   0.279
1657          LG    0.25    0.25    6.00    0.21      30
1658          UI      42     172     257     388     485     324     228     119      66      38
1659          UI      14      13      13       0       0       0       0       0       0       0
              *

1660          KK  RET77C  DIVERT
1661          KM   80% OF THE COMBINED RETENTION VOLUMES FROM MOUNTAIN HORIZONS (SOUTH) PER
1662          KM   APPROVED DRAINAGE REPORTS.
1663          DT  77CRET    16.8     0.0
1664          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1665          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *
1                                        HEC-1 INPUT                                                PAGE 43

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


1666          KK    C77C COMBINE
1667          KM   COMBINE FLOWS FROM BASIN 77C AND ROUTE 77BTC
1668          HC       2
              *

1669          KK  77CT78   ROUTE
1670          KM   ROUTE FLOW FROM 77C TO 78C
1671          RS       3    FLOW      -1
1672          RC   0.035   0.022   0.035    2400  0.0020    0.00
1673          RX    0.00  100.00  110.00  115.00  120.00  125.00  130.00  135.00
1674          RY    4.00    3.00    2.50    0.00    0.00    2.50    8.00    9.00
              * ********************SUB-BASIN 78A - NO CHANGE 11-29-07 DM**********************

1675          KK     78A   BASIN
1676          KM   BASIN 78A
1677          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1678          KM    L=      3.7  Lca=      2.1   S=   28.5  Kn= .090  LAG= 149.0
1679          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1680          BA   1.882
1681          LG    0.35    0.36    5.00    0.28       0
1682          UI      53      55      53      53      54     125     175     205     226     251
1683          UI     270     290     302     325     343     363     399     416     450     515
1684          UI     615     636     722     638     575     536     494     463     439     413
1685          UI     387     358     332     313     293     270     253     234     206     158
1686          UI     153      95      95      96      88      87      89      66      53      54
1687          UI      54       0       0       0       0       0       0       0       0       0
1688          UI       0       0       0       0       0       0       0       0       0       0
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1689          UI       0       0       0       0       0       0       0       0       0       0       0
1690          UI       0       0       0       0       0       0       0       0       0       0       0
1691          UI       0       0       0       0       0       0       0       0       0       0       0
              * ********************SECTION UPDATED 11-29-07 DM*******************************

1692          KK   78ATB   ROUTE
1693          KM   ROUTE FLOW FROM 78A TO 78B
1694          RS       9    FLOW      -1
1695          RC   0.045   0.040   0.045    3500  0.0042    0.00
1696          RX    0.00  500.00  980.00 1003.00 1007.00 1031.00 1511.00 2011.00
1697          RY    4.50    3.50    3.00    0.00    0.00    3.00    3.50    4.50
              *

1698          KK     78B   BASIN
1699          KM   BASIN 78B
1700          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1701          KM    L=0.60  Lca=0.40   S=31.7  Kn=0.050  LAG=21.7
1702          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1703          BA   0.396
1704          LG    0.30    0.36    6.80    0.15      15
1705          UI      61     254     371     576     682     457     315     156      90      48
1706          UI      20      19       0       0       0       0       0       0       0       0
              *
1                                        HEC-1 INPUT                                        PAGE 44

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


1707          KK   CP78B COMBINE
1708          KM   COMBINE FLOWS FROM BASIN 78B AND ROUTE 78ATB
1709          HC       2
              *

1710          KK   78BTC   ROUTE
1711          KM   ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
1712          KM   WESTERN EDGE OF 78C.
1713          RS      11    FLOW      -1
1714          RC   0.035   0.022   0.035    4500  0.0033    0.00
1715          RX    0.00  100.00  110.00  115.00  120.00  125.00  130.00  135.00
1716          RY    5.00    4.00    3.50    0.00    0.00    3.50    8.00    9.00
              *

1717          KK     78C   BASIN
1718          KM   BASIN 78C
1719          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1720          KM    L=0.50  Lca=0.30   S=31.8  Kn=0.077  LAG=27.9
1721          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1722          BA   0.288
1723          LG    0.18    0.26    7.60    0.14       6
1724          UI      80     273     428     624     405     236      96      48      17      16
1725          UI       0       0       0       0       0       0       0       0       0       0
              *

1726          KK  RET78C  DIVERT
1727          KM   80% OF THE COMBINED RETENTION VOLUMES FROM MOUNTAIN HORIZONS (SOUTH) PER
1728          KM   APPROVED DRAINAGE REPORTS.
1729          DT  78CRET     2.2     0.0
1730          DI     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
1731          DQ     0.0   100.0  1000.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

1732          KK    C78C COMBINE
1733          KM   COMBINE FLOWS FROM BASIN 78C AND ROUTE 78BTC
1734          HC       2
              *

1735          KK   C78C2 COMBINE
              * KO     2
1736          KM   COMBINE FLOWS FROM C78C AND ROUTE 77CT78
1737          HC       2
              *

1738          KK  78CT79   ROUTE
1739          KM   ROUTE FLOW FROM 78C TO 79A
1740          RS       3    FLOW      -1
1741          RC   0.035   0.022   0.035   10560  0.0044    0.00
1742          RX    0.00  500.00  800.00  805.00  820.00  825.00 1125.00 1625.00
1743          RY    7.00    6.00    5.00    0.00    0.00    5.00    6.00    7.00
              *
              *
1                                        HEC-1 INPUT                                        PAGE 45

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


1744          KK    79A4   BASIN
1745          KM   BASIN 79A4
1746          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1747          KM    L=1.53  Lca=0.56   S=16.3  Kn=0.090  LAG=71.9
1748          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1749          BA   0.376
1750          LG    0.10    0.33    7.30    0.15      35
1751          UI      17      18      18      44      66      79      89     100     108     121
1752          UI     135     156     193     230     205     174     157     141     128     113
1753          UI     103      89      81      66      49      31      31      28      28      17
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1754          UI      18      17       8       5       6       5       6       5       5       6
1755          UI       5       6       0       0       0       0       0       0       0       0
              *
              *

1756          KK   C79B1 COMBINE
1757          KM   COMBINE HYDROGRAPHS 78CT79 AND 79A4.
1758          HC       2
              *
              *

1759          KK    79A1   BASIN
1760          KM   BASIN 79A1
1761          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1762          KM    L=1.56  Lca=0.98   S=27.6  Kn=0.090  LAG=81.1
1763          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1764          BA   0.200
1765          LG    0.10    0.35    4.10    0.65      25
1766          UI       8       9       8      13      28      33      39      43      47      50
1767          UI      57      62      67      82      97     108      95      83      74      68
1768          UI      63      56      51      46      42      38      30      24      17      14
1769          UI      14      14      11       8       9       8       4       2       3       3
1770          UI       2       3       2       3       2       3       2       3       0       0
              *
              *

1771          KK    79A2   BASIN
1772          KM   BASIN 79A2
1773          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1774          KM    L=0.70  Lca=0.34   S=30.0  Kn=0.090  LAG=39.4
1775          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1776          BA   0.229
1777          LG    0.10    0.37    6.60    0.20      25
1778          UI      19      29      73      98     119     142     191     243     196     159
1779          UI     133     106      84      50      35      29      20      14       6       6
1780          UI       6       6       6       0       0       0       0       0       0       0
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1781          KK    79A3   BASIN
1782          KM   BASIN 79A3
1783          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1784          KM    L=0.59  Lca=0.30   S=25.4  Kn=0.090  LAG=45.7
1785          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1786          BA   0.155
1787          LG    0.10    0.27    8.80    0.09      25
1788          UI      11      12      36      51      62      71      85     109     144     123
1789          UI     102      87      71      61      49      33      20      19      14      11
1790          UI       7       3       4       3       4       4       3       0       0       0
              *
              *

1791          KK   C79B2 COMBINE
1792          KM   COMBINE HYDROGRAPHS 79A1, 79A2, AND 79A3.
1793          HC       3
              *
              *

1794          KK     79A   BASIN
1795          KM   BASIN 79A
1796          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1797          KM    L=1.43  Lca=0.82  S=14.7  Kn=0.090  LAG=82.6
1798          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1799          BA   1.067
1800          LG    0.10    0.15    7.60    0.14       0
1801          UI       0      43      44      43      63     146     167     203     224     240
1802          UI     262     288     316     346     408     489     565     524     446     400
1803          UI     372     340     305     278     255     223     209     178     140     110
1804          UI      76      76      72      71      47      44      44      42      13      13
1805          UI      14      13      13      14      13      13      14      13      13      14
              *
              *

1806          KK    C79A COMBINE
1807          KM   COMBINE HYDROGRAPHS C79B1, C79B2, AND 79A.
              * KO     2
1808          HC       3
              *

1809          KK     79B   BASIN
1810          KM   BASIN 79B
1811          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1812          KM    L=      1.4  Lca=       .6   S=    9.0  Kn= .090  LAG=  77.7
1813          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1814          BA   0.997
1815          LG    0.35    0.25    9.70    0.05       0
1816          UI      43      43      43      83     150     177     205     232     247     271
1817          UI     305     330     383     479     547     517     448     396     359     335
1818          UI     298     264     244     216     195     160     123      79      77      71
1819          UI      71      51      43      43      40      13      13      13      14      13
1820          UI      13      13      13      14      13      13       0       0       0       0
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1821          UI       0       0       0       0       0       0       0       0       0       0       0
              *
1                                        HEC-1 INPUT                                                    PAGE 47

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


1822          KK   C79A2
1823          KM   COMBINE SUBBASIN 79B WITH SUBBASIN 79A
1824          HC       2
              *
              *

1825          KK     78F   BASIN
1826          KM   BASIN 78F
1827          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1828          KM    L=      3.7  Lca=      2.1   S=   32.6  Kn= .090  LAG= 145.0
1829          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1830          BA   4.192
1831          LG    0.34    0.35    5.00    0.28       1
1832          UI     101     102     101     101     103     101     241     337     369     387
1833          UI     469     483     509     553     568     591     635     662     695     758
1834          UI     787     828     919    1032    1188    1258    1349    1230    1137    1038
1835          UI     971     928     873     826     800     746     699     666     623     590
1836          UI     558     518     494     474     416     388     297     290     209     181
1837          UI     179       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          UI       0       0       0       0       0       0       0       0       0       0
1841          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1842          KK   78FTD
1843          KM   ROUTE FLOWS FROM 78F TO 78D VIA WASH
1844          RS       7    FLOW      -1
1845          RC    .045     .04    .045    6250   .0041
1846          RX       0     500     950    1003    1007    1061    1511    2011
1847          RY       5     4.5       4       0       0       4     4.5       5
              *
              *
              *

1848          KK     78D   BASIN
1849          KM   BASIN 78D
1850          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1851          KM    L=      1.2  Lca=       .5   S=   21.7  Kn= .090  LAG=  58.6
1852          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1853          BA   0.887
1854          LG    0.33    0.28    8.00    0.09       7
1855          UI      55      56     120     209     268     305     344     409     471     622
1856          UI     705     563     483     429     362     312     274     214     143      99
1857          UI      91      79      56      55      22      17      17      17      17      17
1858          UI      17      17       0       0       0       0       0       0       0       0
1859          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


1860          KK    C78D
1861          KM   COMBINE FLOWS FROM 82A WITH FLOWS FROM 78D
1862          HC       2
              *
              *

1863          KK     82B   BASIN
1864          KM   BASIN 82B
1865          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1866          KM    L=       .9  Lca=       .4   S=   21.2  Kn= .090  LAG=  17.2
1867          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1868          BA   0.920
1869          LG    0.26    0.25    5.00    0.40      48
1870          UI     102     263     490     628     836    1243    1020     799     604     445
1871          UI     232     171     105      63      31      31      32       0       0       0
1872          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1873          KK   DTTRW
1874          KM    DIVERTING 110.7 ACRE-FEET DUE TO ON-SITE RETENTION
1875          KM   VOLUMES WERE DERIVED FROM DRAINAGE REPORT - REFERENCE 7.
1876          DT     TRW   110.7
1877          DI       0   10000
1878          DQ       0   10000
              *

1879          KK   C78D2
1880          KM   COMBINE FLOWS FROM 78D AND 78F WITH FLOW FROM 82B
1881          HC       2
              *
              *
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1882          KK    82A4   BASIN
1883          KM   BASIN 82A4
1884          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1885          KM    L=      3.5  Lca=      1.5   S=   29.1  Kn= .090  LAG= 128.0
1886          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1887          BA   2.133
1888          LG    0.34    0.36    5.10    0.27       2
1889          UI      57      58      57      57      58      91     188     206     219     263
1890          UI     280     294     314     334     347     368     395     421     445     479
1891          UI     541     617     688     764     718     646     586     547     521     485
1892          UI     459     444     402     377     359     336     311     291     274     260
1893          UI     222     186     164     128     101     102     100      94      94      95
1894          UI      63       0       0       0       0       0       0       0       0       0
1895          UI       0       0       0       0       0       0       0       0       0       0
1896          UI       0       0       0       0       0       0       0       0       0       0
1897          UI       0       0       0       0       0       0       0       0       0       0
1898          UI       0       0       0       0       0       0       0       0       0       0
1899          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


1900          KK   R82A4
1901          KM   ROUTE FROM GERMANN RD NORTH FOR 1/2 MILE ALONG MERIDIAN RD TO 82A3.
1902          RS       2    FLOW      -1
1903          RC     .03     .03     .05    2640   .0015
1904          RX       0      50      75      83     113     121     146     196
1905          RY       4       4       4       0       0       1       2       3
              *
              *

1906          KK    82A3   BASIN
1907          KM   BASIN 82A3
1908          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1909          KM    L=      3.6  Lca=      2.0   S=   28.3  Kn= .090  LAG= 145.0
1910          KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1911          BA   2.020
1912          LG    0.35    0.36    5.00    0.28       0
1913          UI      47      47      47      46      48      46      82     156     161     179
1914          UI     201     216     230     248     256     266     280     293     308     334
1915          UI     349     361     391     420     478     552     566     631     582     528
1916          UI     489     462     434     407     395     374     361     336     314     297
1917          UI     286     271     248     239     227     215     192     179     135     136
1918          UI     100       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          UI       0       0       0       0       0       0       0       0       0       0
1922          UI       0       0       0       0       0       0       0       0       0       0
1923          UI       0       0       0       0       0       0       0       0       0       0
1924          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1925          KK   C82A3
1926          KM   COMBINE FLOWS FROM 82A4 AND 82A3
1927          HC       2
              *
              *

1928          KK  RC82A3
1929          KM   ROUTE FROM 1/2 MILE NORTH OF GERMANN RD NORTHWEST ALONG DIKE TO PECOS RD.
1930          RS       2    FLOW      -1
1931          RC     .03     .03     .05    2700   .0015
1932          RX       0      50      75      83     113     121     146     196
1933          RY       4       4       4       0       0       1       2       3
              *
              *

1934          KK    CAP2
1935          KM   INFLOW FROM EAST OF THE CAP THROUGH 1 - 36" PIPE OVERCHUTE
1936          KM   STATION #536+00 SALT-GILA AQUEDUCT REACH 2
1937          KM   QI CARDS BASED ON OVERCHUTE CAPACITY OF 64 CFS
1938          IN     60
1939          BA    .01
1940          QI       0      20      64      64      64      64      64      64      64      64
1941          QI      64      64      64      64      64      64      64      64      64      64
1                                        HEC-1 INPUT                                          PAGE 50

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

1942          QI      64      64      64      64      64
              *
              *

1943          KK   RCAP2
1944          KM   ROUTE CAP2 THROUGH 82A VIA WASH
1945          IN      15
1946          RS      11    FLOW      -1
1947          RC    .045     .04    .045   24000    .005
1948          RX       0     500    1000    1010    1020    1030    1530    2030
1949          RY       8       5       3       0       0       3       5       8
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                *
                *

1950            KK    82A2   BASIN
1951            KM   BASIN 82A2
1952            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1953            KM    L=      4.6  Lca=      2.9   S=   27.2  Kn= .090  LAG= 185.0
1954            KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1955            BA   4.130
1956            LG    0.35    0.36    5.00    0.28       0
1957            UI      75      76      75      75      75      75      75      76     159     246
1958            UI     248     283     288     330     345     362     373     400     410     427
1959            UI     442     455     476     492     516     549     565     582     613     656
1960            UI     712     776     905     860    1000     994     925     857     799     759
1961            UI     732     691     663     646     617     590     585     543     517     501
1962            UI     477       0       0       0       0       0       0       0       0       0
1963            UI       0       0       0       0       0       0       0       0       0       0
1964            UI       0       0       0       0       0       0       0       0       0       0
1965            UI       0       0       0       0       0       0       0       0       0       0
1966            UI       0       0       0       0       0       0       0       0       0       0
1967            UI       0       0       0       0       0       0       0       0       0       0
1968            UI       0       0       0       0       0       0       0       0       0       0
1969            UI       0       0       0       0       0       0       0       0       0       0
1970            UI       0       0       0       0       0       0       0       0       0       0
1971            UI       0       0       0       0       0       0       0       0       0       0
                *

1972            KK   C82A2
1973            KM   COMBINE FLOWS FROM CAP OVERCHUTE AND SUBBASIN 82A2
1974            HC       2
                *
                *

1975            KK    82A1   BASIN
1976            KM   BASIN 82A1
1977            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1978            KM    L=      3.6  Lca=       .9   S=   33.9  Kn= .090  LAG= 103.0
1979            KM    DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
1980            BA   3.120
1981            LG    0.35    0.36    5.00    0.28       0
1982            UI     100     102     101     100     152     331     373     430     477     514
1983            UI     560     590     630     686     737     785     884    1006    1168    1355
1984            UI    1235    1090    1010     918     849     814     750     684     635     592
1985            UI     542     502     470     401     335     289     190     180     176     165
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1986            UI     167     148     100     102     100     101      67      31      31      31
1987            UI      31       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            UI       0       0       0       0       0       0       0       0       0       0
                *
                *

1991            KK    C82A
1992            KM   COMBINE ALL THE FLOWS AT 1/4 MILE WEST OF MERIDIAN RD AT PECOS RD.
1993            HC       3
                *
                *

1994            KK   82ATD
1995            KM   ROUTE FLOW FROM SUBBASIN 82A TO 78D VIA WASH
1996            RS       4    FLOW      -1
1997            RC    .045     .04    .045    4250   .0056
1998            RX       0     500     950    1010    1025    1085    1535    2035
1999            RY       8       5       3       0       0       3       5       8
                *
                *

2000            KK   C78D3
2001            KM   COMBINE FLOW FROM 82A WITH FLOW FROM C78D
2002            HC       2
                *
                *

2003            KK   78DTE
2004            KM   ROUTE FLOWS FROM 78D TO 78E VIA WASH
2005            RS       4    FLOW      -1
2006            RC    .045     .04    .045    5280   .0041
2007            RX       0     500     950    1000    1010    1070    1511    2011
2008            RY       7       5       3       0       0       3       5       7
                *
                *

2009            KK    78E   BASIN
2010            KM   BASIN 78E
2011            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2012            KM    L=      1.1  Lca=       .5   S=   17.4  Kn= .087  LAG=  57.4
2013            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2014            BA   1.006
2015            LG    0.35    0.26    8.80    0.06       1
2016            UI      59      60     110     214     276     316     354     411     465     583
2017            UI     754     687     572     503     440     381     333     285     229     158
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2018          UI     104      99      94      59      60      38      18      18      19      18
2019          UI      18      18      18      18       0       0       0       0       0       0
2020          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

2021          KK    C78E
2022          KM   COMBINE FLOWS FROM 78D AND 78E (CRISMAN ROAD)
2023          HC       2
              *
              *

2024          KK      83   BASIN
2025          KM   BASIN 83
2026          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2027          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .098  LAG=  84.4
2028          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2029          BA   1.007
2030          LG    0.49    0.25    5.00    0.41       1
2031          UI      40      41      40      53     133     154     184     205     223     238
2032          UI     263     291     310     364     446     505     504     432     382     355
2033          UI     322     296     268     243     218     203     179     147     117      78
2034          UI      71      69      66      58      41      40      40      28      13      12
2035          UI      13      12      12      13      12      12      13      12      13      12
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          KK   C78E2
2039          KM   COMBINE FLOWS ALONG PECOS ROAD AT CRISMON ROAD INTERSECTION
2040          HC       2
              *

2041          KK  78ET84
2042          KM   ROUTE FLOW FROM INTERSECTION OF PECOS RD AND CRISMON RD TO THE CORNER OF
2043          KM   PECOS AND ELLSWORTH WHERE IT WILL BE COMBINED WITH SUBBASIN 84
2044          KM   ROUTING IS VIA PECOS ROAD
2045          RS       6    FLOW      -1
2046          RC     .06    .055    .065    5280   .0032
2047          RX       0     500    1000    1002    1006    1046    1546    2046
2048          RY       4     3.5      .5      .5     3.5     4.5       5     5.5
              *
              *

2049          KK      84   BASIN
2050          KM   BASIN 84
2051          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2052          KM    L=      2.0  Lca=       .5   S=   12.5  Kn= .100  LAG=  89.1
2053          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2054          BA   0.991
2055          LG    0.50    0.25    4.70    0.47       0
2056          UI      37      38      37      37     117     136     160     181     198     215
2057          UI     231     251     275     301     346     421     482     461     401     363
2058          UI     331     303     286     255     232     219     190     179     157     124
2059          UI     102      67      67      62      62      54      37      38      38      32
2060          UI      12      11      12      11      12      11      12      11      11      12
2061          UI      11       0       0       0       0       0       0       0       0       0
2062          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

2063          KK     C84
2064          KM     COMBINE C83 AND 84
2065          HC       2
              * KO     2
              *
              *

2066          KK    EC-4   ROUTE   REACH
2067          KM   ELLSWORTH ROAD CHANNEL REACH-4
2068          KM   ROUTE FLOWS FROM THE CORNER OF PECOS AND ELLSWORTH ROADS TO
2069          KM   THE POINT 1/2 MILE NORTH OF PECOS WHERE FLOW FROM GM ENTERS
2070          RS       1    FLOW      -1
2071          RC   0.030   0.030   0.030    3000  0.0010    0.00
2072          RX     0.0    16.0    32.8    49.6   114.6   131.4   148.2   164.2
2073          RY     6.4     6.7     3.4     0.0     0.0     3.4     6.7     6.4
              *

2074          KK   C79B3
2075          HC       2
              *

2076          KK    EC-3   ROUTE   REACH
2077          KM   ROUTE FLOWS FROM THE COMBINE POINT OF SUB-BASIN 79B TO
2078          KM   WILLIAMS FIELD ROAD ALIGNMENT AT THE GM MANIFOLD STRUCTURE
2079          RS       2    FLOW      -1
2080          RC   0.030   0.030   0.030    3500  0.0010    0.00
2081          RX     0.0    16.0    32.7    49.4   114.4   131.1   147.8   163.8
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2082          RY     6.4     6.7     3.3     0.0     0.0     3.3     6.7     6.4
              *

2083          KK    EC-2   ROUTE   REACH
2084          KM   ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NEW NORTH
2085          KM   PERIMETER CHANNEL TO A POINT ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD
2086          RS       2    FLOW      -1
2087          RC   0.030   0.030   0.030    4200  0.0010    0.00
2088          RX     0.0    16.0    33.2    50.4   160.4   177.5   194.7   210.7
2089          RY     6.6     6.9     3.4     0.0     0.0     3.4     6.9     6.6
              *

2090          KK    EC-1   ROUTE   REACH
2091          KM   ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NEW NORTH
2092          KM   FROM A POINT ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD TO POWERLINE FLOODWAY.
2093          RS       1    FLOW      -1
2094          RC   0.030   0.030   0.030    3201  0.0010    0.00
2095          RX     0.0    16.0    33.2    50.4   160.4   177.5   194.7   210.7
2096          RY     6.6     6.9     3.4     0.0     0.0     3.4     6.9     6.6
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2097          KK   CPPWR
2098          KM   COMBINE FLOWS FROM 75 AND 79 IN THE POWERLINE FLOODWAY ALONG RAY ROAD
2099          KM    AND AT HAWES ROAD.
              * KO     2
2100          HC       2
              *
              *

2101          KK  CPT80A
2102          KM   ROUTE CPPWR THROUGH AIR FORCE PERIMETER CHANNEL (POWERLINE FLOODWAY)
2103          RS       2    FLOW      -1
2104          RC    .055    .025    .055    9000   .0038
2105          RX       0    1005    1023    1040    1100    1117    1135    2140
2106          RY       9     8.5     8.5       0       0     8.5     8.5       9
              *
              *

2107          KK     80A   BASIN
2108          KM   BASIN 80A
2109          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2110          KM    L=      3.8  Lca=      2.2   S=   14.2  Kn= .038  LAG=  73.7
2111          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2112          BA   2.639
2113          LG    0.15    0.15    9.70    0.06      55
2114          UI     153     155     269     543     702     804     901    1037    1174    1424
2115          UI    1902    1849    1519    1344    1170    1016     893     770     641     477
2116          UI     292     263     254     179     153     147      47      47      47      47
2117          UI      46      48      46      47       0       0       0       0       0       0
2118          UI       0       0       0       0       0       0       0       0       0       0
2119          UI       0       0       0       0       0       0       0       0       0       0
              *

2120          KK  CPOWER
2121          KM   COMBINE FLOWS FROM C79A AND SUBBASIN 80A
2122          KM   ALSO COMBINES THE FLOWS FROM THE DIBBLE DRAINAGE FACILITY ROUTED BY 76ATPR
              * KO     2                                21
              * HC     3
2123          HC       2
              *
              *

2124          KK  EMFPOW
2125          KM   EMF AT POWERLINE
              * KO     2
2126          HC       2
              *
              *

2127          KK  POWTWI
2128          KM   ROUTE EMF FLOW TO WILLIAMS FIELD ROAD VIA THE EMF
2129          KM   THIS SECTION IS CONCRETE LINE TO PAST POWER ROAD BRIDGE
2130          RS       2    FLOW      -1
2131          RC     .03    .012     .03    4750   .0003
2132          RX       0     500     520     553     693     726     740     742
1                                        HEC-1 INPUT                                                    PAGE 55

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

2133          RY      14      12      11       0       0      11      11      12
              *
              *

2134          KK     80B   BASIN
2135          KM   BASIN 80B
2136          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2137          KM    L=      1.5  Lca=       .9   S=   18.4  Kn= .047  LAG=  44.7
2138          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
              * KO                                   21
2139          BA   1.116
```

```
2140          LG    0.14    0.17    6.80    0.18      50
2141          UI      96     142     364     486     588     708     953    1206     937     775
2142          UI     638     511     397     229     164     136      97      59      29      30
2143          UI      29      30      29       0       0       0       0       0       0       0
2144          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2145          KK     81B   BASIN
2146          KM   BASIN 81B
2147          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2148          KM    L=      1.1  Lca=       .4   S=    6.9  Kn= .065  LAG=  48.6
2149          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2150          BA   0.842
2151          LG    0.35    0.25    4.70    0.42      26
2152          UI      54      55     131     215     271     306     353     415     506     676
2153          UI     642     514     446     393     329     280     237     167     100      93
2154          UI      84      54      55      26      17      17      16      17      17      16
2155          UI      17       0       0       0       0       0       0       0       0       0
2156          UI       0       0       0       0       0       0       0       0       0       0
              *

2157          KK  80B81B
2158          KM   COMBINE FLOWS ON WILLIAMS GATEWAY BEFORE ENTERING INTO THE EMF
2159          KO                                    21
2160          HC       2
              *
              *

2161          KK  EMFWIL
2162          KM   COMBINE FLOWS INTO THE EMF WEST OF WILLIAMS AFB FROM 80A, EMFPOWERLINE AND
2163          KM   EMFRAY
              * KO     2
2164          HC       2
              *
              *

2165          KK  WILTSP
2166          KM   ROUTE EMF FLOW FROM WILLIAMS FIELD ROAD TO THE SOUTHERN PACIFIC RAILROAD
2167          KM     (AT RITTENHOUSE ROAD)
2168          RS       2    FLOW      -1
2169          RC     .03    .022     .03    5000   .0003
2170          RX       0     500     520     553     693     726     740     742
2171          RY      14      12      11       0       0      11      11      12
              *
              * KK82BT83
              * KM   ROUTE 82B TO S83 VIA PECOS ROAD
              * RS     6    FLOW      -1
              * RC  .045    .025    .045    5260   .0032
              * RX     0     500    1000    1002    1006    1046    1546    2046
              * RY   4.5     4.0      .5       0       0      .5     4.5     5.5
              *
              * KK   C83
              * KM   COMBINE C82B AND 83
              * HC     2
              *
              * KK 83T84
              * KM   ROUTE S83 TO S84 VIA PECOS ROAD
              * RS     6    FLOW      -1
              * RC   .06    .055    .065    5260   .0032
              * RX     0     500    1000    1002    1006    1046    1546    2046
              * RY     4     3.5      .5      .5     3.5     4.5       5     5.5
              *
              * KK 84T85
              * KM  ROUTE S84 TO S85 VIA WAFB SOUTH PERIMETER CHANNEL
              * RS     4    FLOW      -1
              * RC  0.06   0.035    0.06    5260   .0039
              * RX     0     500    1000    1013    1028    1041    1541    2041
              * RY   5.5       5     4.5       0       0     4.5       5     5.5
              *
```



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


2172          KK      85   BASIN
2173          KM   BASIN 85
2174          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2175          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .100  LAG=  86.1
2176          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2177          BA   1.005
2178          LG    0.48    0.25    4.30    0.60       4
2179          UI      41      42      41      63     137     161     193     213     231     248
2180          UI     277     300     333     392     472     542     485     419     374     348
2181          UI     317     286     260     235     210     197     162     124      96      73
2182          UI      71      67      65      41      42      41      32      13      13      12
2183          UI      13      13      12      13      13      12      13      13       0       0
2184          UI       0       0       0       0       0       0       0       0       0       0
2185          UI       0       0       0       0       0       0       0       0       0       0
              *
              * KK   C85
              * KM  COMBINE C84 AND 85
              * HC     2
              *
```

```
2186          KK   85T86
2187          KM     ROUTE S85 TO S86 VIA WAFB SOUTH PERIMETER CHANNEL
2188          RS       3    FLOW      -1
2189          RC   0.055   0.035   0.055    5280   .0039
2190          RX       0     500    1000    1013    1028    1041    1541    2041
2191          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *

2192          KK      86   BASIN
2193          KM   BASIN 86
2194          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2195          KM    L=      2.0  Lca=       .5   S=   15.0  Kn= .100  LAG=  86.1
2196          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2197          BA   1.001
2198          LG    0.50    0.25    4.55    0.52       1
2199          UI      39      40      40      47     131     150     178     201     216     231
2200          UI     255     283     302     346     421     486     510     435     384     356
2201          UI     322     299     271     244     223     202     185     156     121      92
2202          UI      70      69      65      65      43      39      40      40      12      12
2203          UI      12      12      13      12      12      12      12      12      13      12
2204          UI       0       0       0       0       0       0       0       0       0       0
2205          UI       0       0       0       0       0       0       0       0       0       0
              *

2206          KK     C86
2207          KM     COMBINE 85 AND 86
2208          HC       2
              *
1                                       HEC-1 INPUT                                          PAGE 57

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


2209          KK   86T91
2210          KM     ROUTE S86 TO S91 VIA WAFB SOUTH PERIMETER CHANNEL. Grassy v=3ft/sec
2211          RS       6    FLOW      -1
2212          RC    0.05   0.035    0.05    5500   .0025
2213          RX       0     500    1000    1013    1028    1041    1541    2041
2214          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              *

2215          KK     87A   BASIN
2216          KM   BASIN 87A
2217          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2218          KM    L=      1.0  Lca=       .5   S=   24.9  Kn= .100  LAG=  58.5
2219          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2220          BA   0.492
2221          LG    0.49    0.25    5.00    0.41       1
2222          UI      29      29      54     105     135     154     173     201     228     285
2223          UI     369     335     280     247     214     187     162     140     112      77
2224          UI      51      49      46      29      29      19       8       9       9       9
2225          UI       9       9       9       9       0       0       0       0       0       0
2226          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2227          KK   87ATB
2228          KM   ROUTE 87A TO 87B VIA SHEET FLOW
2229          RS       6    FLOW      -1
2230          RC    .040    .040    .040    2640   .0056
2231          RX       0     500    1000    1005    1006    1011    1511    2011
2232          RY       1      .5       0       0       0      .5       1     1.5
              *
              *

2233          KK     87B   BASIN
2234          KM   BASIN 87B
2235          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2236          KM    L=       .9  Lca=       .5   S=   11.6  Kn= .100  LAG=  63.8
2237          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2238          BA   0.492
2239          LG    0.50    0.25    5.00    0.42       0
2240          UI      26      26      29      87     108     126     142     160     178     201
2241          UI     245     310     325     273     234     209     189     163     143     129
2242          UI     107      78      53      45      43      37      26      26      19       8
2243          UI       8       8       8       8       8       7       8       8       0       0
2244          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2245          KK     C87
2246          KM   COMBINE FLOW FROM SUBBASINS 87A AND 87B
2247          HC       2
              *
              *
1                                       HEC-1 INPUT                                          PAGE 58

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


2248          KK  87T88B
2249          KM     ROUTE S87 TO S88 VIA GERMANN ROAD
2250          RS      11    FLOW      -1
2251          RC    .045    .025    .045    5280    .002
```

```
2252          RX       0    1000    1005    1010    1050    1060    1560    2060
2253          RY      14      13      18      12      11      14    14.5      15
              *
              *

2254          KK     88A   BASIN
2255          KM   BASIN 88A
2256          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2257          KM    L=       .8  Lca=       .2   S=   13.2  Kn= .100  LAG=  46.2
2258          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2259          BA   0.502
2260          LG    0.50    0.25    5.00    0.42       0
2261          UI      37      37     115     163     197     228     273     340     465     400
2262          UI     333     283     234     199     161     113      65      61      48      37
2263          UI      26      11      11      11      11      12      11       0       0       0
2264          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2265          KK   88ATB
2266          KM   ROUTE FLOWS FROM SUBBASIN 88A TO 88B VIA SHEET FLOW
2267          RS       4    FLOW      -1
2268          RC     .04     .04     .04    2640   .0090
2269          RX       0     500    1000    1001    1002    1500    2000    2500
2270          RY       1     1.5       0       0       0      .5       1     1.5
              *
              *

2271          KK     88B   BASIN
2272          KM   BASIN 88B
2273          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2274          KM    L=       .9  Lca=       .6   S=   21.2  Kn= .100  LAG=  63.8
2275          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2276          BA   0.498
2277          LG    0.47    0.25    5.00    0.41       5
2278          UI      28      28      43      97     124     143     160     183     208     240
2279          UI     315     359     299     258     228     200     176     152     133     108
2280          UI      74      49      48      46      29      28      24       9       9       8
2281          UI       9       8       9       8       9       0       0       0       0       0
2282          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2283          KK    C88B
2284          KM   COMBINE FLOWS FROM SUBBASINS 88A AND 88B
2285          HC       2
              *
              *
1                                        HEC-1 INPUT                                                PAGE 59

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


2286          KK     C88
2287          KM    COMBINE 87 AND 88
2288          HC       2
              *

2289          KK   88T89
2290          KM     ROUTE S88 TO S89 VIA GERMANN ROAD
2291          RS      11    FLOW      -1
2292          RC    .045    .025    .045    5280    .004
2293          RX       0    1000    1005    1010    1050    1060    1560    2060
2294          RY      14      13      18      12      11      14    14.5      15
              *
              *

2295          KK     89A   BASIN
2296          KM   BASIN 89A
2297          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2298          KM    L=      1.0  Lca=       .6   S=   19.0  Kn= .100  LAG=  67.5
2299          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2300          BA   0.498
2301          LG    0.50    0.25    4.60    0.52       0
2302          UI      25      25      25      77     100     119     134     148     164     186
2303          UI     214     268     320     293     245     217     201     176     153     138
2304          UI     122     103      76      51      44      42      39      25      25      24
2305          UI       8       8       7       8       8       7       8       8       7       8
2306          UI       0       0       0       0       0       0       0       0       0       0
2307          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2308          KK   89ATB
2309          KM   ROUTE FLOWS FROM SUBBASIN 89A TO 89B VIA SHEET FLOW
2310          RS       8    FLOW      -1
2311          RC    .040    .040    .040    2640   .0037
2312          RX       0     500    1000    1001    1002    1500    2000    2500
2313          RY       1      .5       0       0       0      .5       1     1.5
              *
              *

2314          KK     89B   BASIN
2315          KM   BASIN 89B
2316          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
2317          KM    L=       .9  Lca=       .5   S=   23.2  Kn= .100  LAG=  58.3
2318          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2319          BA   0.496
2320          LG    0.50    0.25    4.80    0.47       0
2321          UI      29      29      51     101     132     152     169     195     220     268
2322          UI     358     347     286     252     220     191     168     144     121      90
2323          UI      55      49      48      33      29      28       8       9       9       9
2324          UI       9       9       9       8       0       0       0       0       0       0
2325          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                        HEC-1 INPUT                                                PAGE 60

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


2326          KK    C89B
2327          KM   COMBINE FLOWS FROM SUBBASINS 89A AND 89B
2328          HC       2
              *
              *


2329          KK     C89
2330          KM   COMBINE FLOWS FROM C89B AND C88
2331          HC       2
              *
              *


2332          KK   89T90
2333          KM    ROUTE S89 TO S90 VIA GERMANN ROAD
2334          RS      11    FLOW      -1
2335          RC    .045    .025    .045    8818   .0045
2336          RX       0    1000    1005    1010    1050    1060    1560    2060
2337          RY      14      13      18      12      11      14    14.5      15
              *
              *


2338          KK     90A   BASIN
2339          KM   BASIN 90A
2340          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2341          KM    L=       .6  Lca=       .2   S=   24.2  Kn= .099  LAG=  33.4
2342          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2343          BA   0.480
2344          LG    0.49    0.26    4.55    0.51       0
2345          UI      48     105     216     278     352     481     590     449     353     276
2346          UI     207     112      82      57      41      15      15      14      15       0
2347          UI       0       0       0       0       0       0       0       0       0       0
2348          UI       0       0       0       0       0       0       0       0       0       0
              *
              *


2349          KK   90ATB
2350          KM   ROUTE FLOWS FROM SUBBASIN 90A TO 90B VIA SHEET FLOW
2351          RS      11    FLOW      -1
2352          RC    .055     .04    .055    4000   .0037
2353          RX       0     500    1000    1001    1002    1500    2000    2500
2354          RY       1      .5       0       0       0      .5       1     1.5
              *
              *


2355          KK     90B   BASIN
2356          KM   BASIN 90B
2357          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2358          KM    L=      2.0  Lca=      1.2   S=   15.3  Kn= .068  LAG=  80.7
2359          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2360          BA   0.825
2361          LG    0.36    0.25    4.65    0.41      11
2362          UI      36      36      36      74     127     150     174     195     210     229
2363          UI     260     281     330     409     470     419     364     326     294     277
2364          UI     239     218     197     175     154     122      93      63      63      59
1                                        HEC-1 INPUT                                                PAGE 61

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

2365          UI      57      36      36      36      22      11      11      12      11      11
2366          UI      11      11      11      11      11       0       0       0       0       0
2367          UI       0       0       0       0       0       0       0       0       0       0
              *
              *


2368          KK    C90B
2369          KM   COMBINE FLOWS FROM 90A AND 90B
2370          HC       2
              *
              *  ********************************************************************
              *  ********************************************************************
              *
              *       THE FOLLOWING SUBBASINS AND ROUTING INFORMATION WERE
              *       ORIGINALLY INSERTED FROM THE QUEEN CREEK ADMS.  THE
              *       LOSS PARAMETERS HAVE BEEN UPDATED FROM THE SCS METHOD
              *       (WHICH IS NOT A CURRENTLY ACCEPTABLE DISTRICT METHODOLOGY)
              *       TO THE GREEN-AMPT METHOD AS REQUESTED BY THE DISTRICT
              *       AS PART OF THE QUEEN CREEK/SANOKAI WASH HMP & EMF
              *       CAPACITY MITIGATION STUDY.  NO ATTEMPT WAS MADE TO MATCH
              *       PREVIOUS PEAKS NOR WERE ANY ROUTING REVISIONS MADE EXCEPT
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                *       AS NECESSARY DUE TO CHANGES IN HYDROLOGIC COMBINATION POINTS.
                *
                *  ********************************************************************
                *  ********************************************************************
                *
                *  ***********  UPDATED TO GREEN-AMPT  ***********

2371            KK  SUB258
2372            KM   BASIN 258
2373            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2374            KM    L=      4.6  Lca=      2.5   S=   24.8  Kn= .062  LAG= 122.0
2375            KM    AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2376            BA    3.65
2377            LG     .34     .17    4.70     .42   18.00
2378            UI    110.    110.    110.    110.    110.    217.    232.    299.    386.    574.
2379            UI    583.    717.    579.    644.    772.    918.    802.    927.    927.    927.
2380            UI    927.    927.    927.    927.    834.    772.    772.    772.    866.    865.
2381            UI    583.    579.    583.    650.    605.    458.    421.    421.    381.    331.
2382            UI    315.    309.    352.    309.    211.    211.    190.    178.    178.    159.
2383            UI    136.    136.    136.    125.    101.    101.    101.    101.    101.     74.
2384            UI     63.     63.     63.     63.     63.     63.     63.     63.     29.     14.
2385            UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
2386            UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
2387            UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
2388            UI     14.     14.     14.     14.     14.     14.     14.     14.     14.      0.
2389            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2390            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


2391            KK   RO259
2392            KM        ROUTE SUB258 TO CO262
2393            RM      11    1.57    0.20
                *
                *  ***********  UPDATED TO GREEN-AMPT  ***********

2394            KK  SUB260
2395            KM   BASIN 260
2396            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2397            KM    L=      1.0  Lca=       .5   S=   23.2  Kn= .100  LAG=  60.7
2398            KM    AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2399            BA     .98
2400            LG     .50     .00    4.80     .46     .00
2401            UI     60.     60.     89.    145.    262.    352.    335.    455.    474.    502.
2402            UI    502.    502.    430.    422.    459.    314.    339.    276.    228.    188.
2403            UI    169.    172.    114.     98.     88.     74.     68.     55.     55.     44.
2404            UI     34.     34.     34.     34.      7.      7.      7.      7.      7.      7.
2405            UI      7.      7.      7.      7.      7.      7.      7.      7.      7.      7.
2406            UI      7.      7.      7.      7.      0.      0.      0.      0.      0.      0.
2407            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

2408            KK   CO262
2409            KM        COMBINE SUB260 AND RO259
2410            HC       2
                *

2411            KK   RO263
2412            KM        ROUTE CO262 TO CO266
2413            RM      11    1.56    0.20
                *
                *  ***********  UPDATED TO GREEN-AMPT  ***********

2414            KK  SUB264
2415            KM   BASIN 264
2416            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2417            KM    L=      1.0  Lca=       .6   S=   20.0  Kn= .100  LAG=  65.8
2418            KM    AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2419            BA    1.00
2420            LG     .50     .00    4.70     .48     .00
2421            UI     56.     56.     70.    117.    202.    301.    325.    355.    426.    470.
2422            UI    470.    470.    470.    404.    392.    428.    327.    301.    306.    221.
2423            UI    204.    165.    164.    148.    107.     90.     84.     69.     68.     51.
2424            UI     51.     51.     32.     32.     32.     32.     28.      7.      7.      7.
2425            UI      7.      7.      7.      7.      7.      7.      7.      7.      7.      7.
2426            UI      7.      7.      7.      7.      7.      7.      7.      7.      0.      0.
2427            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
1                                           HEC-1 INPUT                                          PAGE 63

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


2428            KK   CO266
2429            KM        COMBINE SUB264 AND RO263
2430            HC       2
                *

2431            KK   RO267
2432            KM        ROUTE CO266 TO CO270
2433            RM      11    3.31    0.20
                *
```

```
                *  ***********  UPDATED TO GREEN-AMPT  ***********

2434            KK  SUB268
2435            KM   BASIN 268
2436            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2437            KM    L=      2.0  Lca=      1.1   S=   13.4  Kn= .090  LAG= 107.0
2438            KM    AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2439            BA     .97
2440            LG     .45     .04    4.65     .48    6.00
2441            UI     33.     33.     33.     33.     52.     70.     87.    122.    176.    197.
2442            UI    191.    176.    234.    274.    245.    281.    281.    281.    281.    281.
2443            UI    281.    253.    234.    234.    252.    251.    209.    176.    178.    199.
2444            UI    166.    133.    128.    122.    100.     96.     95.    108.     77.     64.
2445            UI     60.     54.     54.     47.     41.     41.     41.     31.     31.     31.
2446            UI     31.     31.     19.     19.     19.     19.     19.     19.     19.     18.
2447            UI      4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
2448            UI      4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
2449            UI      4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
2450            UI      4.      4.      4.      4.      4.      0.      0.      0.      0.      0.
2451            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

2452            KK   CO270
2453            KM        COMBINE RUNOFF FROM RO267 AND SUB268
2454            HC       2
                *
                *

2455            KK   RO283
2456            KM        ROUTE CO282 TO CONCENTRATION POINT C90
2457            RM      11    2.78    0.20
                *
                *  ********************************************************************
                *  ********************************************************************
                *
                *       THIS ENDS THE UPDATES TO THE QC ADMS INSERTIONS FOR THIS
                *       PORTION OF THE MODEL.
                *
                *  ********************************************************************
                *  ********************************************************************
                *
                *
1                                       HEC-1 INPUT                                                 PAGE 64

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

2458            KK     C90
2459            KM    COMBINE C89 AND C90B
2460            HC       3
                *
                *

2461            KK   90T91
2462            KM    ROUTE S90 TO S91 VIA SPRR
2463            RS       2    FLOW      -1
2464            RC    .045    .022    .045    6178    .004
2465            RX       0     500    1000    1015    1065    1076    1576    2076
2466            RY       5     4.5       4       0       0       5     5.5       6
                *

2467            KK      91   BASIN
2468            KM   BASIN 91
2469            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2470            KM    L=      1.4  Lca=       .6   S=   18.4  Kn= .089  LAG=  67.3
2471            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2472            BA   0.459
2473            LG    0.37    0.33    4.65    0.35       0
2474            UI      22      22      22      61      83     102     115     127     138     157
2475            UI     175     208     258     287     240     208     188     169     149     137
2476            UI     119     106      91      67      46      39      37      36      23      22
2477            UI      22      12       6       7       7       7       6       7       7       7
2478            UI       7       0       0       0       0       0       0       0       0       0
2479            UI       0       0       0       0       0       0       0       0       0       0
                *

2480            KK    CP91
2481            KM     COMBINE 91, 90,AND 86 AT EMF NEAR THE RITTENHOUSE CHANNEL
2482            HC       3
                *
                *

2483            KK     81A   BASIN
2484            KM   BASIN 81A
2485            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2486            KM    L=      3.3  Lca=      1.9   S=   16.4  Kn= .032  LAG=  54.1
2487            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2488            BA   1.814
2489            LG    0.15    0.25    4.70    0.42      55
2490            UI     119     120     299     481     606     686     789     931    1184    1509
2491            UI    1335    1090     954     826     689     587     475     305     212     199
2492            UI     155     119     104      37      36      37      37      37      37      36
2493            UI       0       0       0       0       0       0       0       0       0       0
2494            UI       0       0       0       0       0       0       0       0       0       0
                *
```

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

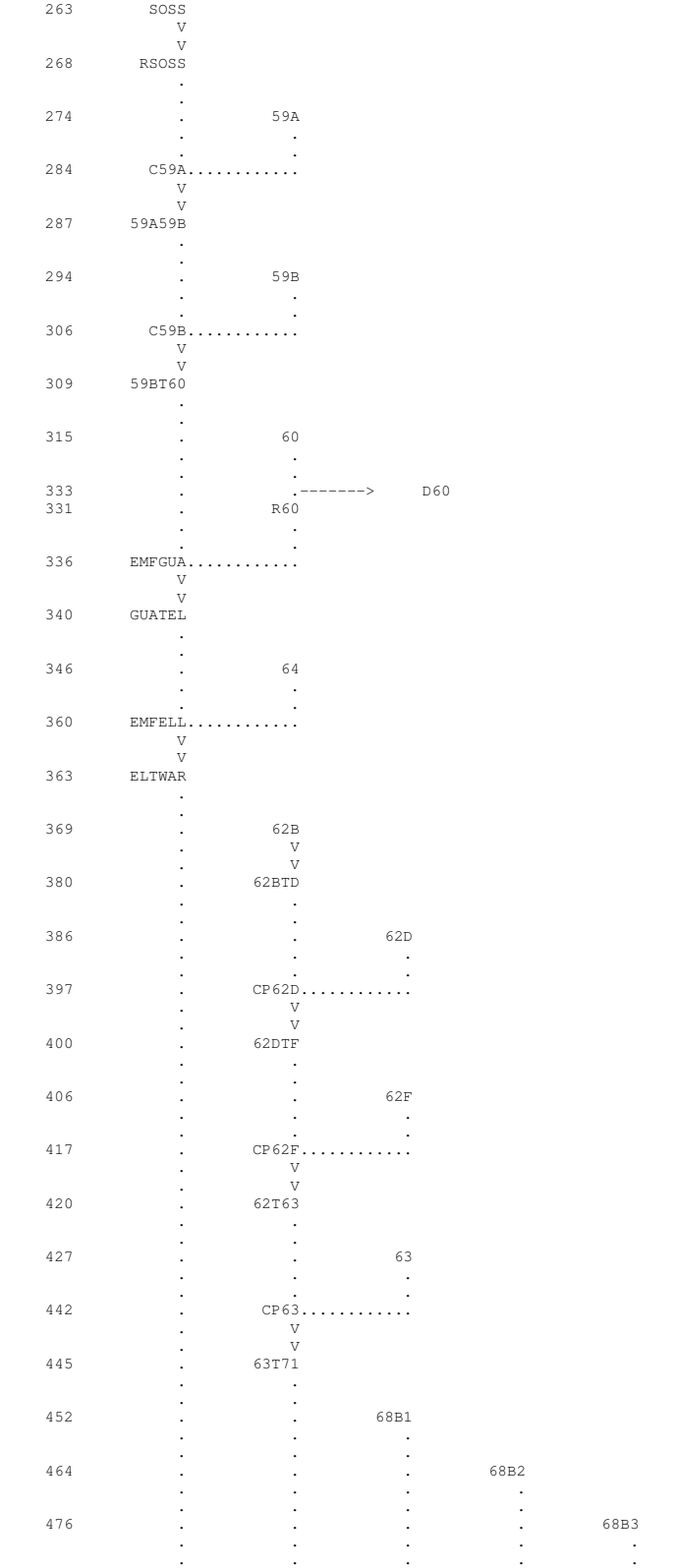
2495          KK   CP91A
2496          KM   COMBINE FLOWS FOR A ROUTE VIA THE RITTENHOUSE CHANNEL
2497          HC       2
              *
              *

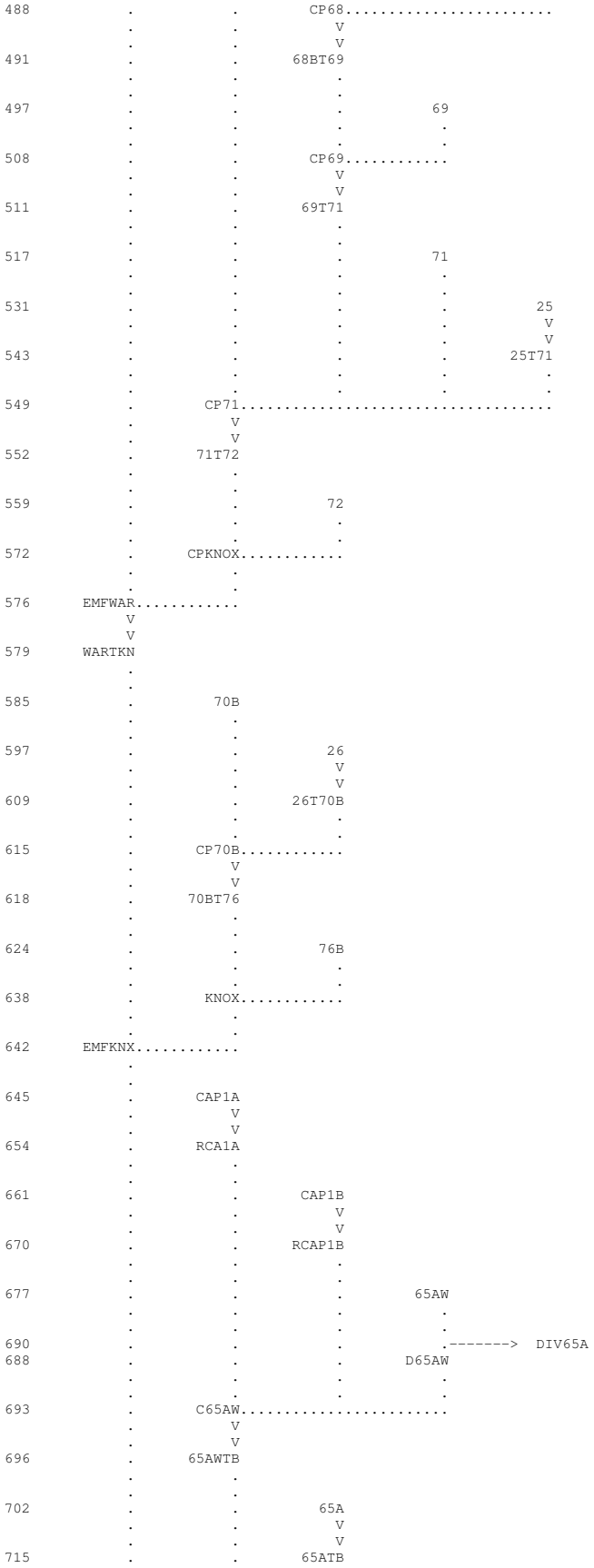
2498          KK     R91
2499          KM   ROUTE 91 TO EMF
2500          KO                                    21
2501          RS       1    FLOW      -1
2502          RC   0.035   0.022   0.035    4000   0.003
2503          RX       0     100     130     140     170     180     210     310
2504          RY       8       7       6       0       0       6       7       8
              *
              *
              * KK 81ATB
              * KM ROUTE SUBASIN 81A TO 81B VIA ROAD NETWORK FOR ON-BASE HOUSEING
              * RS     9    FLOW      -1
              * RC  .013    .013    .013    8000   .0035
              * RX     0     500     750     753    1053    1056    1303    1803
              * RY     3     1.5       1      .6      .6       1     1.5       3
              *
              *
              *
              * KKRITTEN
              * KM COMBINE FLOWS AT RITTENHOUSE ROAD BEFORE ENTERING INTO THE EMF.
              * KO                                    21
              * HC     2
              * HC     3
              *
              *

2505          KK  EMFRIT
2506          KM   COMBINE 81A AND 81B AND RITTENHOUSE
2507          KO                                      21
2508          HC       2
              *
              *
2509          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO. | (V) ROUTING | (.) CONNECTOR | (---->) DIVERSION OR PUMP FLOW | (<---) RETURN OF DIVERTED OR PUMPED FLOW

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69
508
CP69
511
69T71
517
71
531
25
543
25T71
549
CP71
552
71T72
559
72
572
CPKNOX
576
EMFWAR
579
WARTKN
585
70B
597
26
609
26T70B
615
CP70B
618
70BT76
624
76B
638
KNOX
642
EMFKNX
645
CAP1A
654
RCA1A
661
CAP1B
670
RCAP1B
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65AW
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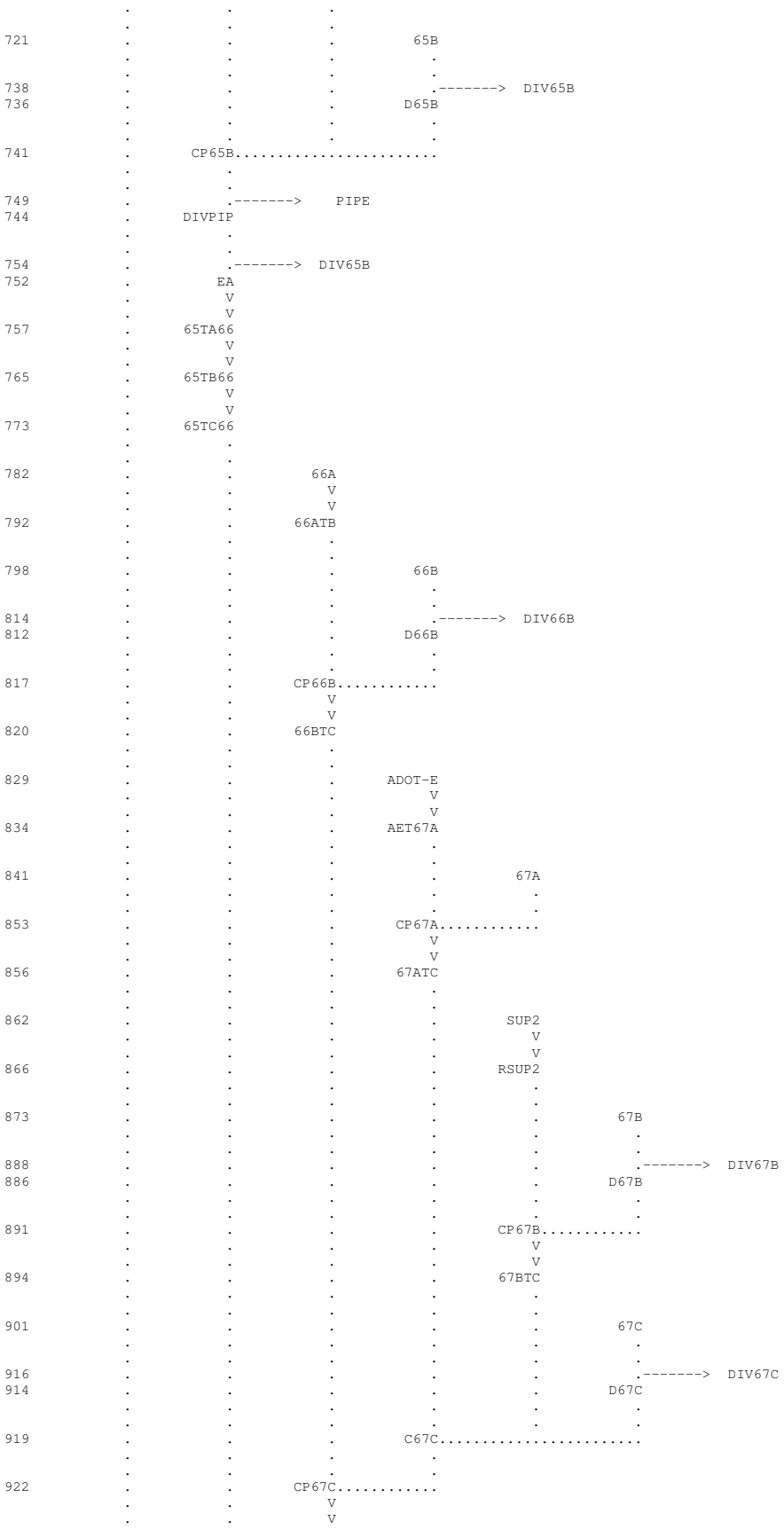
DIV65A
688
D65AW
693
C65AW
696
65AWTB
702
65A
715
65ATB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736 D65B
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749 PIPE
744 DIVPIP
754 DIV65B
752 EA
757 65TA66
765 65TB66
773 65TC66
782 66A
792 66ATB
798 66B
814 DIV66B
812 D66B
817 CP66B
820 66BTC
829 ADOT-E
834 AET67A
841 67A
853 CP67A
856 67ATC
862 SUP2
866 RSUP2
873 67B
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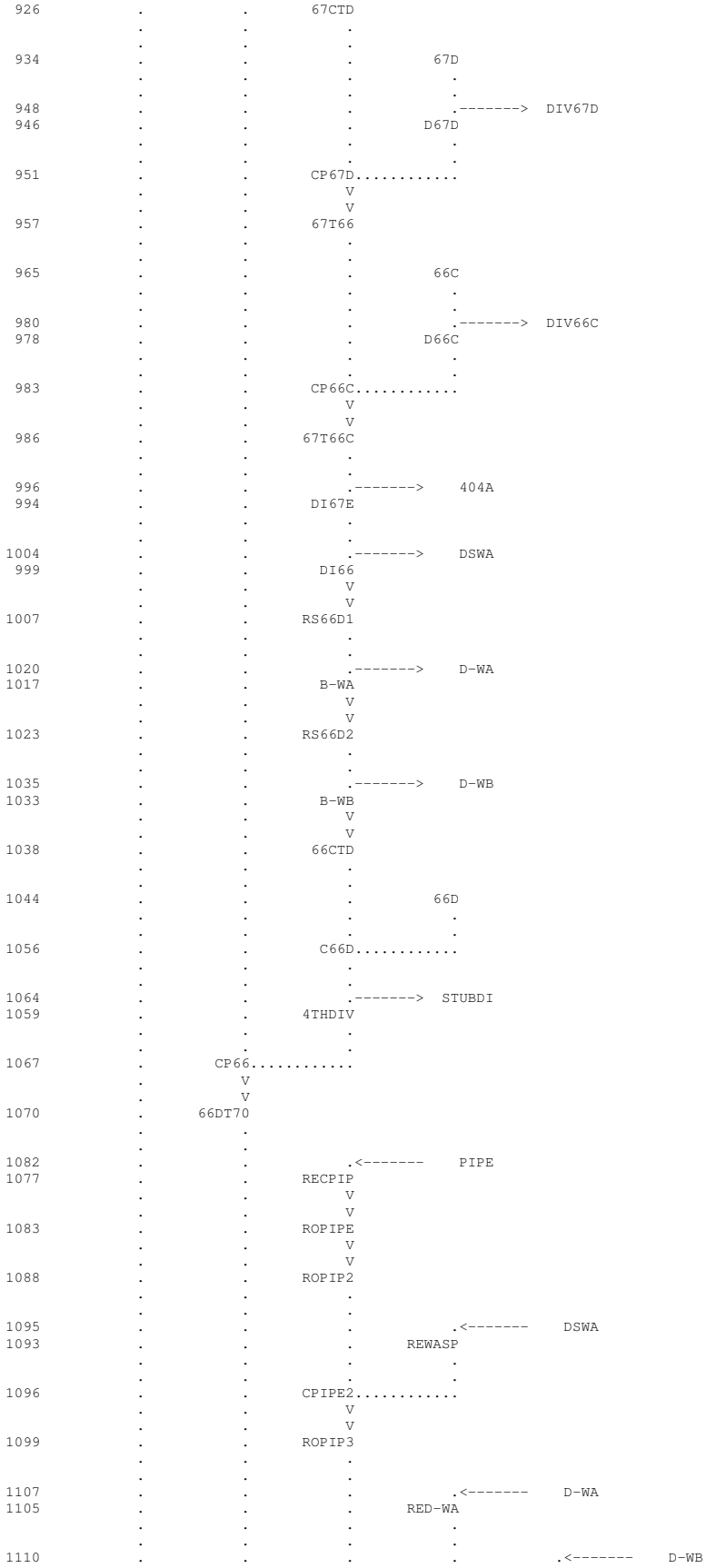
886 D67B
891 CP67B
894 67BTC
901 67C
916 DIV67C
914 D67C
919 C67C
922 CP67C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946 D67D
951 CP67D
957 67T66
965 66C
980 DIV66C
978 D66C
983 CP66C
986 67T66C
996 404A
994 DI67E
1004 DSWA
999 DI66
1007 RS66D1
1020 D-WA
1017 B-WA
1023 RS66D2
1035 D-WB
1033 B-WB
1038 66CTD
1044 66D
1056 C66D
1064 STUBDI
1059 4THDIV
1067 CP66
1070 66DT70
1082 PIPE
1077 RECPIP
1083 ROPIPE
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1099 ROPIP3
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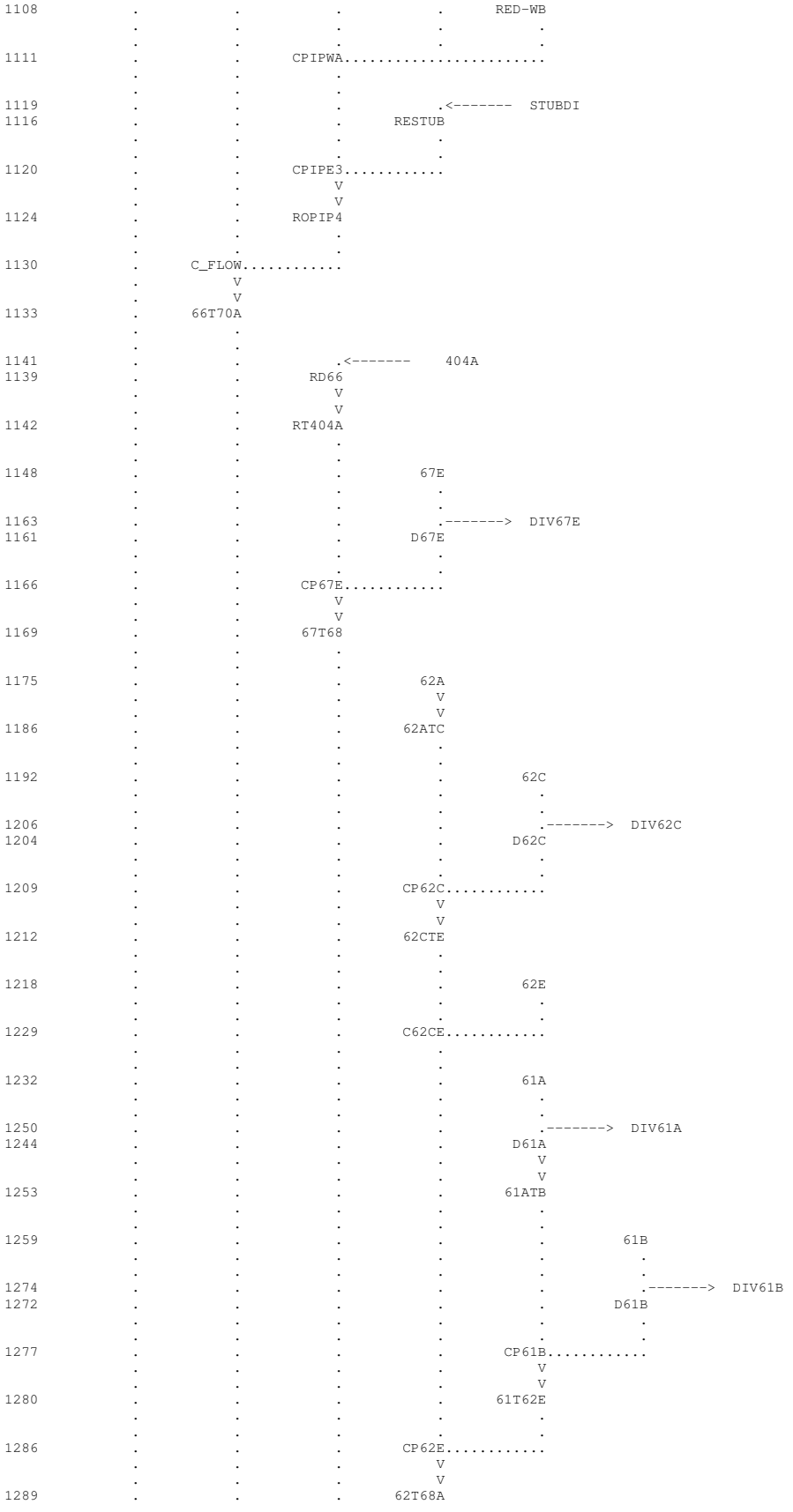
1105 RED-WA
1110 D-WB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1139 RD66
1142 RT404A
1148 67E
1163 DIV67E
1161 D67E
1166 CP67E
1169 67T68
1175 62A
1186 62ATC
1192 62C
1206 DIV62C
1204 D62C
1209 CP62C
1212 62CTE
1218 62E
1229 C62CE
1232 61A
1250 DIV61A
1244 D61A
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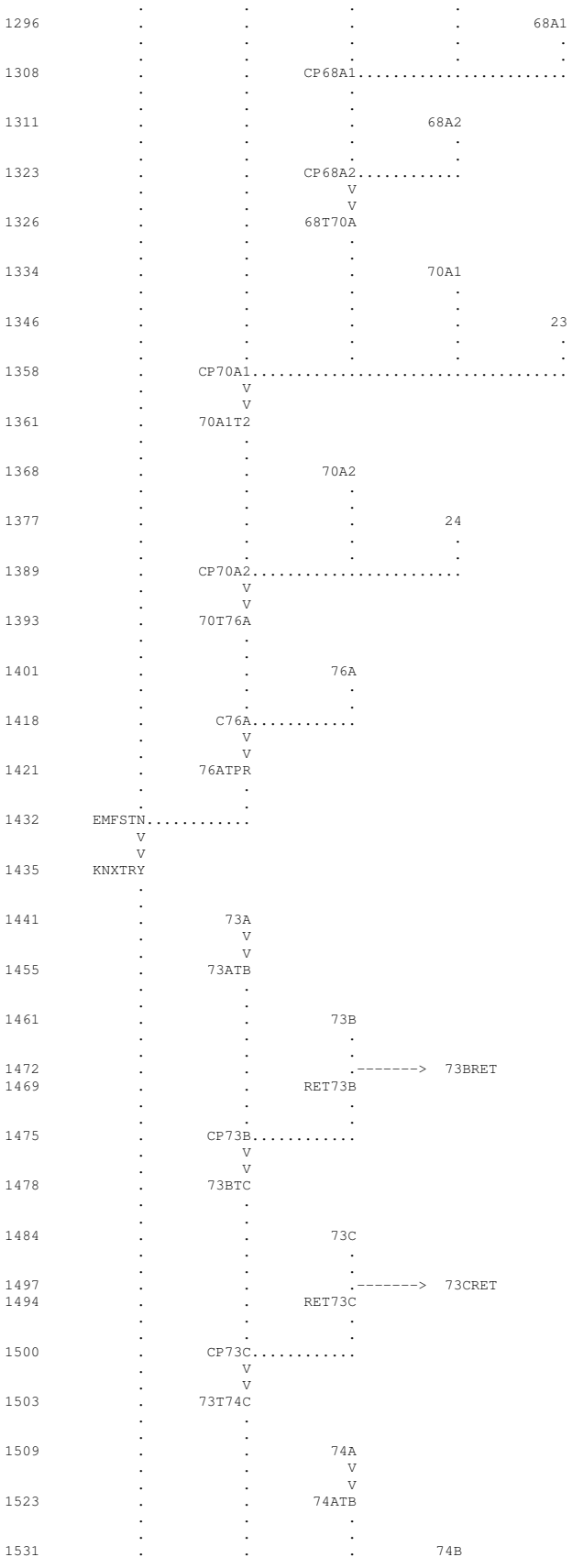
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1361
70A1T2
1368
70A2
1377
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1389
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70T76A
1401
76A
1418
C76A
1421
76ATPR
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EMFSTN
1435
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1441
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1455
73ATB
1461
73B
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73C
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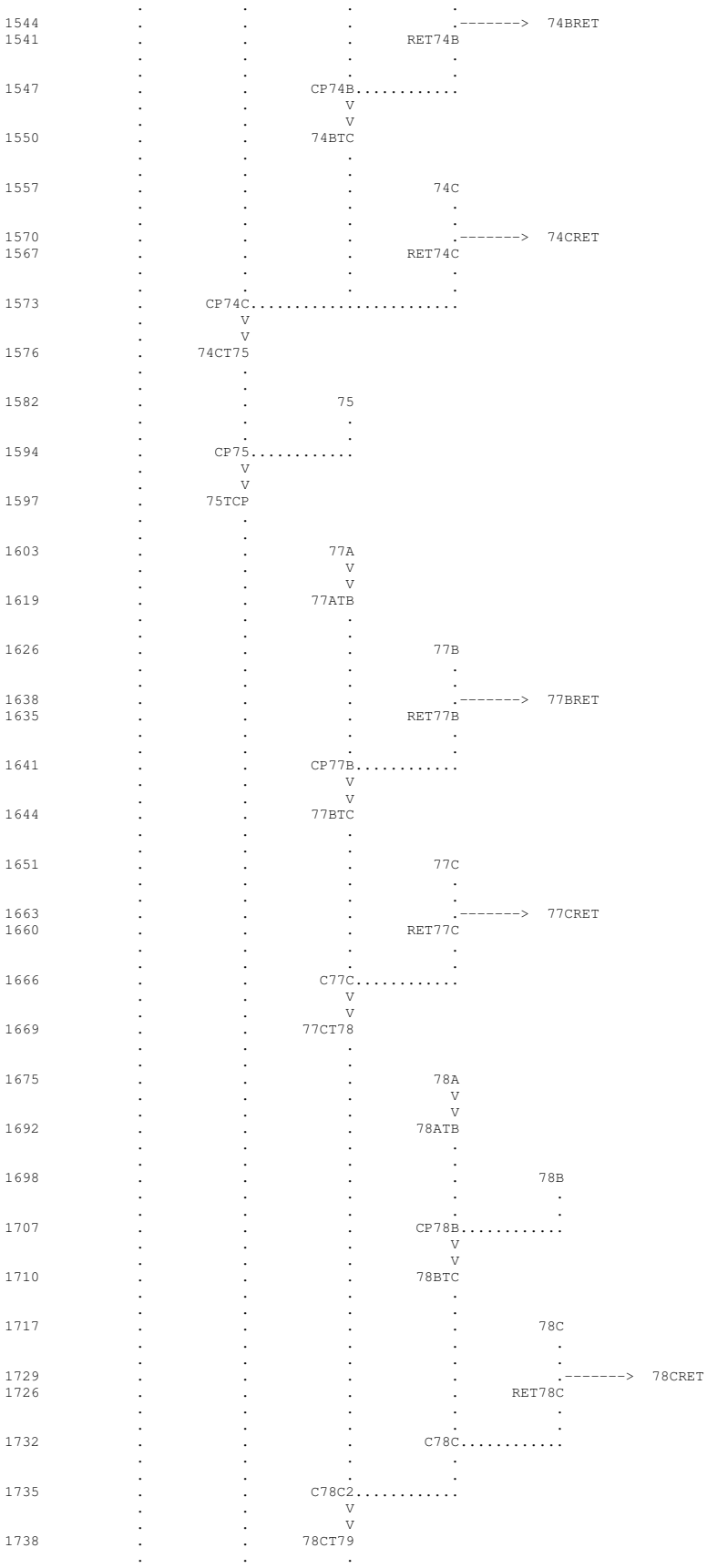
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77B
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1635
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1641
CP77B
1644
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1651
77C
1663
77CRET
1660
RET77C
1666
C77C
1669
77CT78
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78C
1729
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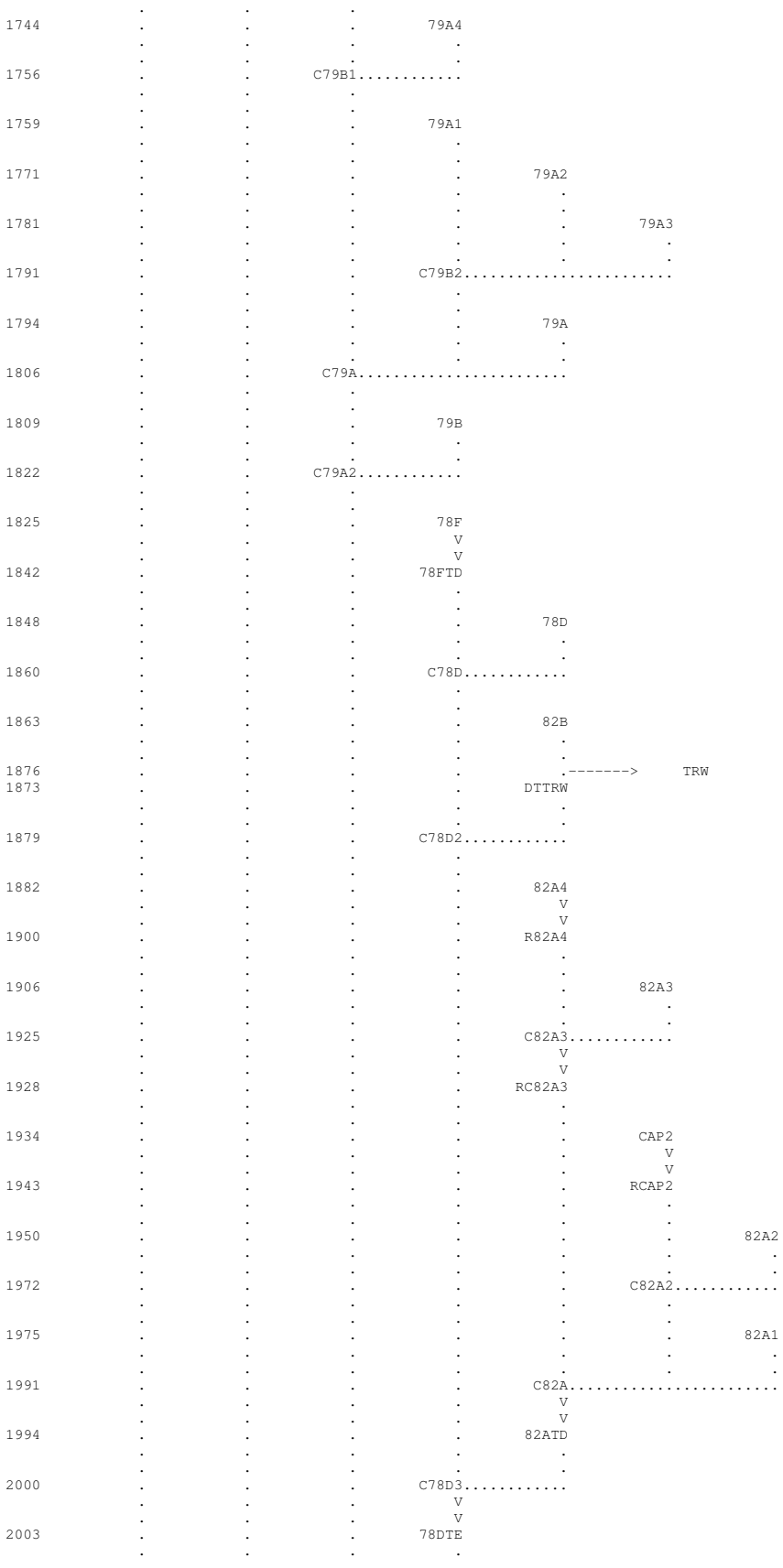
C78C
1735
C78C2
1738
78CT79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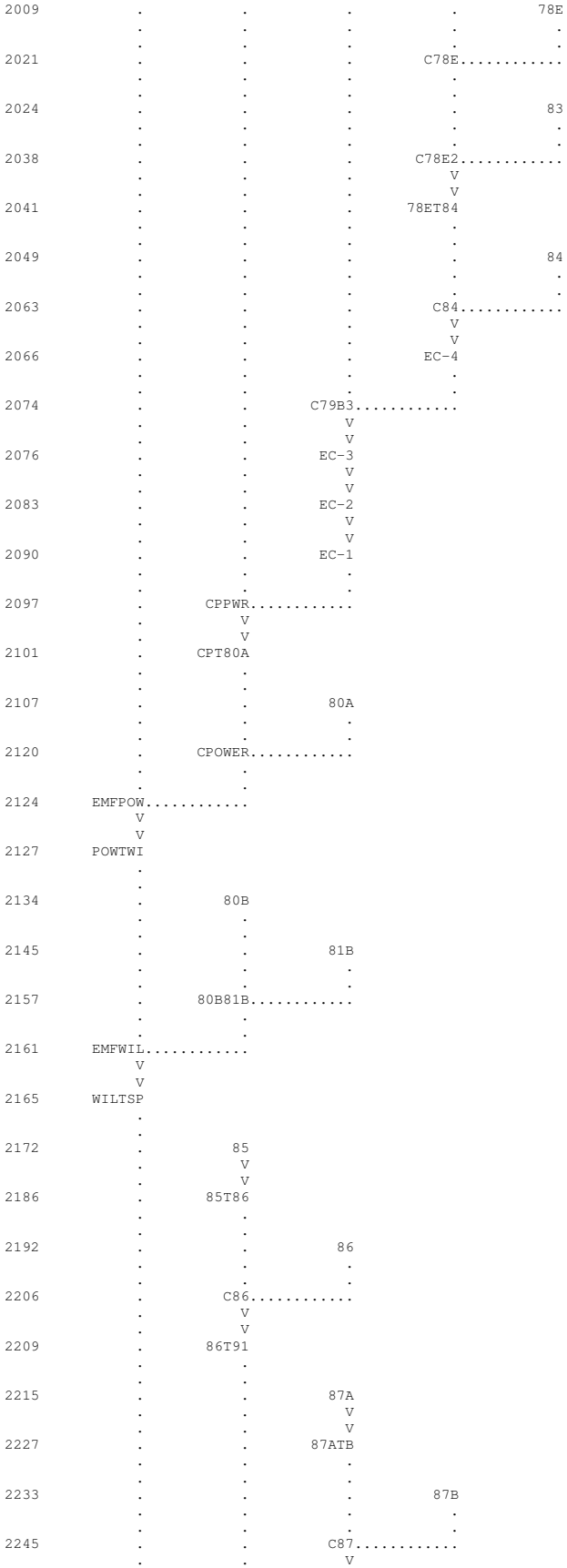
1771 79A2
1781 79A3
1791 C79B2
1794 79A
1806 C79A
1809 79B
1822 C79A2
1825 78F
1842 78FTD
1848 78D
1860 C78D
1863 82B
1876
1873 DTTRW
1879 C78D2
1882 82A4
1900 R82A4
1906 82A3
1925 C82A3
1928 RC82A3
1934 CAP2
1943 RCAP2
1950 82A2
1972 C82A2
1975 82A1
1991 C82A
1994 82ATD
2000 C78D3
2003 78DTE
TRW


2009
78E
2021
C78E
2024
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2038
C78E2
2041
78ET84
2049
84
2063
C84
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EC-4
2074
C79B3
2076
EC-3
2083
EC-2
2090
EC-1
2097
CPPWR
2101
CPT80A
2107
80A
2120
CPOWER
2124
EMFPOW
2127
POWTWI
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80B
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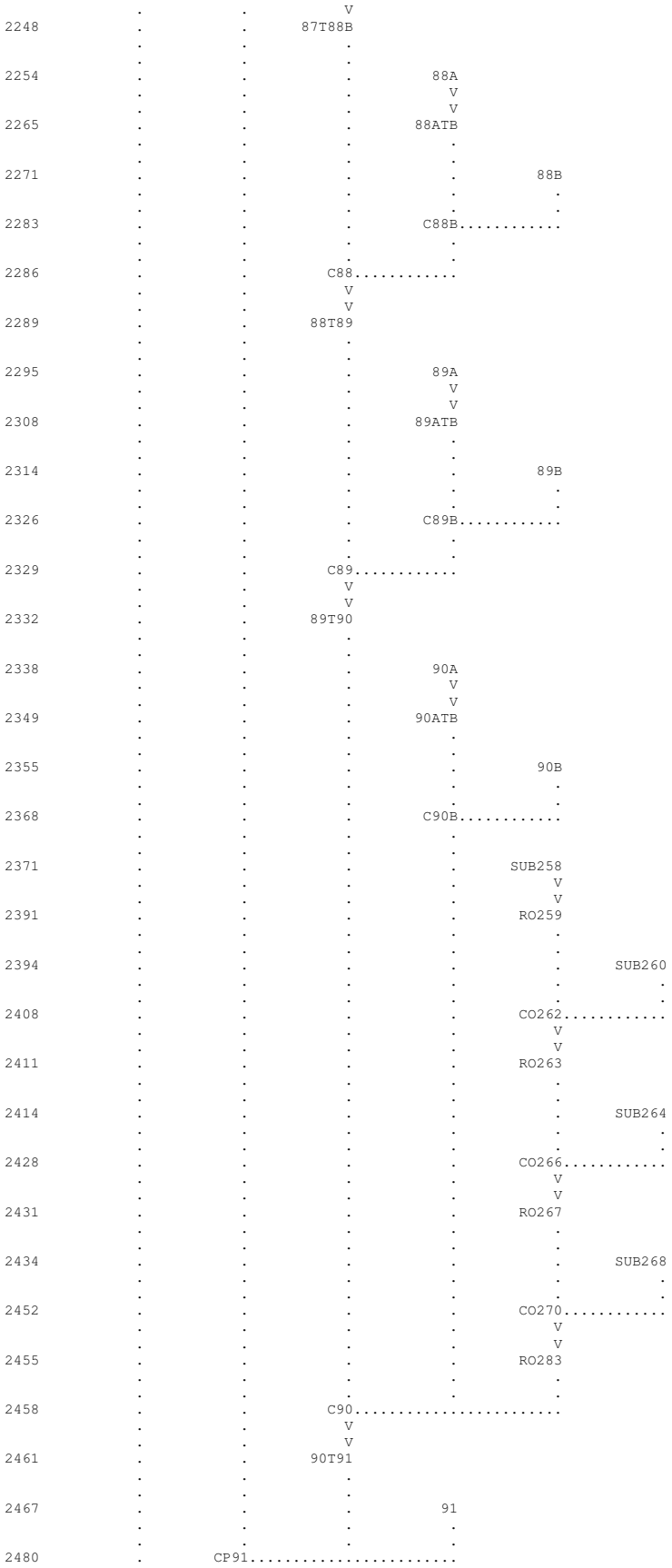
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2326 C89B
2329 C89
2332 89T90
2338 90A
2349 90ATB
2355 90B
2368 C90B
2371 SUB258
2391 RO259
2394 SUB260
2408 CO262
2411 RO263
2414 SUB264
2428 CO266
2431 RO267
2434 SUB268
2452 CO270
2455 RO283
2458 C90
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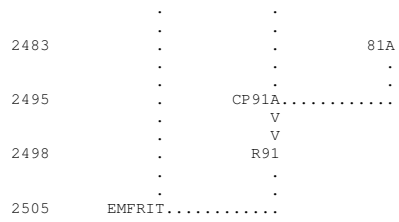
2467 91
2480 CP91



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SOSS	1695.	12.67	588.	208.	83.	12.50		
+	ROUTED TO	RSOSS	1671.	12.75	586.	208.	83.	12.50		
+	HYDROGRAPH AT	59A	298.	12.33	41.	13.	4.	.26		
+	2 COMBINED AT	C59A	1763.	12.67	619.	218.	87.	12.76		
+	ROUTED TO	59A59B	1726.	12.83	614.	218.	87.	12.76		
+	HYDROGRAPH AT	59B	582.	12.92	125.	36.	12.	.94		
+	2 COMBINED AT	C59B	2249.	12.92	719.	249.	97.	13.70		
+	ROUTED TO	59BT60	2235.	12.92	718.	249.	97.	13.70		
+	HYDROGRAPH AT	60	853.	13.75	302.	88.	30.	2.30		
+	DIVERSION TO	D60	853.	13.75	187.	50.	17.	2.30		
+	HYDROGRAPH AT	R60	636.	14.17	139.	38.	13.	2.30		
+	2 COMBINED AT	EMFGUA	2235.	12.92	825.	281.	108.	16.00		
+	ROUTED TO	GUATEL	2093.	13.33	805.	280.	107.	16.00		
+	HYDROGRAPH AT	64	435.	13.00	86.	22.	7.	.81		
+	2 COMBINED AT	EMFELL	2340.	13.33	860.	298.	114.	16.81		
+	ROUTED TO	ELTWAR	2191.	13.67	848.	298.	114.	16.81		
+	HYDROGRAPH AT	62B	215.	12.42	25.	7.	2.	.23		
+	ROUTED TO	62BTD	166.	12.75	25.	7.	2.	.23		
+	HYDROGRAPH AT	62D	320.	12.58	43.	11.	4.	.46		
+	2 COMBINED AT	CP62D	450.	12.67	68.	18.	6.	.69		
+	ROUTED TO	62DTF	349.	13.33	67.	18.	6.	.69		
+	HYDROGRAPH AT	62F	230.	12.42	27.	7.	2.	.26		
+	2 COMBINED AT	CP62F	436.	12.50	95.	24.	8.	.95		
+	ROUTED TO	62T63	376.	12.92	94.	24.	8.	.95		
+	HYDROGRAPH AT	63	321.	13.58	93.	24.	8.	.91		
+	2 COMBINED AT	CP63	654.	13.58	184.	48.	16.	1.86		
+	ROUTED TO	63T71	457.	15.25	181.	47.	16.	1.86		
+	HYDROGRAPH AT	68B1	122.	12.50	16.	4.	1.	.15		
+	HYDROGRAPH AT	68B2	60.	12.42	7.	2.	1.	.06		

	HYDROGRAPH AT							
+		68B3	45.	12.25	4.	1.	0.	.04
	3 COMBINED AT							
+		CP68	199.	12.42	27.	7.	2.	.24
	ROUTED TO							
+		68BT69	178.	12.67	27.	7.	2.	.24
	HYDROGRAPH AT							
+		69	66.	12.58	9.	2.	1.	.09
	2 COMBINED AT							
+		CP69	236.	12.67	35.	9.	3.	.33
	ROUTED TO							
+		69T71	156.	13.83	35.	9.	3.	.33
	HYDROGRAPH AT							
+		71	411.	13.42	107.	27.	9.	.86
	HYDROGRAPH AT							
+		25	139.	12.67	20.	5.	2.	.21
	ROUTED TO							
+		25T71	73.	14.25	20.	5.	2.	.21
	4 COMBINED AT							
+		CP71	539.	13.50	320.	86.	29.	3.26
	ROUTED TO							
+		71T72	521.	13.67	319.	86.	29.	3.26
	HYDROGRAPH AT							
+		72	427.	13.08	96.	24.	8.	.84
	2 COMBINED AT							
+		CPKNOX	752.	13.58	403.	109.	36.	4.10
	2 COMBINED AT							
+		EMFWAR	2830.	13.67	1172.	393.	145.	20.91
	ROUTED TO							
+		WARTKN	2770.	13.83	1169.	393.	145.	20.91
	HYDROGRAPH AT							
+		70B	279.	12.83	55.	14.	5.	.33
	HYDROGRAPH AT							
+		26	60.	12.33	7.	2.	1.	.05
	ROUTED TO							
+		26T70B	45.	12.67	7.	2.	1.	.05
	2 COMBINED AT							
+		CP70B	318.	12.83	61.	15.	5.	.38
	ROUTED TO							
+		70BT76	232.	14.00	61.	15.	5.	.38
	HYDROGRAPH AT							
+		76B	416.	13.17	104.	26.	9.	.64
	2 COMBINED AT							
+		KNOX	466.	13.17	165.	41.	14.	1.01
	2 COMBINED AT							
+		EMFKNX	3134.	13.83	1287.	428.	157.	21.92
	HYDROGRAPH AT							
+		CAP1A	217.	2.00	217.	217.	217.	.01
	ROUTED TO							
+		RCA1A	217.	2.92	217.	217.	217.	.01
	HYDROGRAPH AT							
+		CAP1B	217.	2.00	217.	217.	217.	.01
	ROUTED TO							
+		RCAP1B	217.	2.92	217.	217.	217.	.01
	HYDROGRAPH AT							
+		65AW	534.	12.33	61.	17.	6.	.43
	DIVERSION TO							
+		DIV65A	166.	11.92	10.	3.	1.	.43
	HYDROGRAPH AT							
+		D65AW	534.	12.33	54.	14.	5.	.43
	3 COMBINED AT							
+		C65AW	968.	12.33	488.	448.	439.	.45
	ROUTED TO							

+		65AWTB	524.	16.50	485.	448.	439.	.45
+	HYDROGRAPH AT	65A	1298.	13.00	257.	65.	22.	2.54
+	ROUTED TO	65ATB	1057.	13.67	257.	65.	22.	2.54
+	HYDROGRAPH AT	65B	753.	13.17	181.	48.	16.	1.37
+	DIVERSION TO	DIV65B	330.	12.42	29.	8.	3.	1.37
+	HYDROGRAPH AT	D65B	753.	13.17	157.	40.	13.	1.37
+	3 COMBINED AT	CP65B	1941.	13.58	880.	550.	473.	4.37
+	DIVERSION TO	PIPE	500.	12.50	499.	455.	441.	4.37
+	HYDROGRAPH AT	DIVPIP	1441.	13.58	381.	95.	32.	4.37
+	DIVERSION TO	DIV65B	1016.	13.00	71.	18.	6.	4.37
+	HYDROGRAPH AT	EA	1441.	13.58	310.	77.	26.	4.37
+	ROUTED TO	65TA66	1400.	13.67	309.	77.	26.	4.37
+	ROUTED TO	65TB66	1395.	13.67	309.	77.	26.	4.37
+	ROUTED TO	65TC66	1323.	14.08	309.	77.	26.	4.37
+	HYDROGRAPH AT	66A	284.	12.33	32.	8.	3.	.26
+	ROUTED TO	66ATB	227.	12.75	32.	8.	3.	.26
+	HYDROGRAPH AT	66B	366.	13.00	77.	20.	7.	.67
+	DIVERSION TO	DIV66B	273.	12.75	26.	7.	2.	.67
+	HYDROGRAPH AT	D66B	366.	13.00	52.	13.	4.	.67
+	2 COMBINED AT	CP66B	539.	12.92	84.	21.	7.	.93
+	ROUTED TO	66BTC	524.	13.08	84.	21.	7.	.93
+	HYDROGRAPH AT	ADOT-E	251.	14.50	182.	67.	22.	.01
+	ROUTED TO	AET67A	250.	14.75	181.	67.	22.	.01
+	HYDROGRAPH AT	67A	216.	12.67	35.	10.	3.	.30
+	2 COMBINED AT	CP67A	253.	14.75	198.	76.	26.	.31
+	ROUTED TO	67ATC	251.	15.17	196.	76.	26.	.31
+	HYDROGRAPH AT	SUP2	442.	13.00	384.	218.	73.	.01
+	ROUTED TO	RSUP2	398.	16.33	382.	218.	73.	.01
+	HYDROGRAPH AT	67B	366.	12.75	71.	20.	7.	.53
+	DIVERSION TO	DIV67B	295.	12.58	30.	8.	3.	.53
+	HYDROGRAPH AT	D67B	366.	12.75	46.	12.	4.	.53
+	2 COMBINED AT	CP67B	414.	13.92	390.	230.	77.	.54

	ROUTED TO							
+		67BTC	402.	17.50	390.	230.	77.	.54
	HYDROGRAPH AT							
+		67C	619.	12.75	108.	28.	9.	.93
	DIVERSION TO							
+		DIV67C	286.	12.25	15.	4.	1.	.93
	HYDROGRAPH AT							
+		D67C	619.	12.75	95.	24.	8.	.93
	3 COMBINED AT							
+		C67C	914.	13.08	628.	328.	111.	1.78
	2 COMBINED AT							
+		CP67C	1407.	13.08	707.	348.	117.	2.70
	ROUTED TO							
+		67CTD	1389.	13.17	706.	348.	117.	2.70
	HYDROGRAPH AT							
+		67D	145.	12.33	16.	4.	1.	.13
	DIVERSION TO							
+		DIV67D	145.	12.33	10.	3.	1.	.13
	HYDROGRAPH AT							
+		D67D	106.	12.42	7.	2.	1.	.13
	2 COMBINED AT							
+		CP67D	1393.	13.17	710.	350.	118.	2.83
	ROUTED TO							
+		67T66	1372.	13.17	710.	350.	118.	2.83
	HYDROGRAPH AT							
+		66C	385.	12.67	61.	16.	5.	.50
	DIVERSION TO							
+		DIV66C	332.	12.50	27.	7.	2.	.50
	HYDROGRAPH AT							
+		D66C	385.	12.67	34.	9.	3.	.50
	2 COMBINED AT							
+		CP66C	1504.	13.17	741.	358.	120.	3.33
	ROUTED TO							
+		67T66C	1481.	13.25	740.	358.	120.	3.33
	DIVERSION TO							
+		404A	76.	12.42	76.	64.	22.	3.33
	HYDROGRAPH AT							
+		DI67E	1405.	13.25	664.	294.	98.	3.33
	DIVERSION TO							
+		DSWA	410.	12.67	410.	229.	76.	3.33
	HYDROGRAPH AT							
+		DI66	995.	13.25	254.	65.	22.	3.33
	ROUTED TO							
+		RS66D1	187.	15.08	142.	53.	21.	3.33
	DIVERSION TO							
+		D-WA	22.	15.08	22.	19.	10.	3.33
	HYDROGRAPH AT							
+		B-WA	165.	15.08	120.	34.	11.	3.33
	ROUTED TO							
+		RS66D2	26.	20.08	26.	23.	11.	3.33
	DIVERSION TO							
+		D-WB	26.	20.08	26.	23.	11.	3.33
	HYDROGRAPH AT							
+		B-WB	0.	.00	0.	0.	0.	3.33
	ROUTED TO							
+		66CTD	0.	.00	0.	0.	0.	3.33
	HYDROGRAPH AT							
+		66D	223.	12.83	40.	10.	3.	.31
	2 COMBINED AT							
+		C66D	216.	12.83	38.	10.	3.	3.64
	DIVERSION TO							
+		STUBDI	180.	12.67	37.	9.	3.	3.64
	HYDROGRAPH AT							
+		4THDIV	36.	12.83	1.	0.	0.	3.64

	2 COMBINED AT							
+		CP66	1323.	14.08	310.	78.	26.	8.01
	ROUTED TO							
+		66DT70	1196.	14.33	290.	73.	24.	8.01
	HYDROGRAPH AT							
+		RECPIP	500.	12.50	499.	455.	441.	4.37
	ROUTED TO							
+		ROPIPE	500.	12.58	499.	455.	441.	4.37
	ROUTED TO							
+		ROPIP2	500.	12.67	499.	455.	441.	4.37
	HYDROGRAPH AT							
+		REWASP	410.	12.67	410.	229.	76.	3.33
	2 COMBINED AT							
+		CPIPE2	910.	12.67	909.	684.	517.	4.34
	ROUTED TO							
+		ROPIP3	910.	13.00	909.	684.	517.	4.34
	HYDROGRAPH AT							
+		RED-WA	22.	15.08	22.	19.	10.	3.33
	HYDROGRAPH AT							
+		RED-WB	26.	20.08	26.	23.	11.	3.33
	3 COMBINED AT							
+		CPIPWA	956.	17.83	947.	725.	538.	4.34
	HYDROGRAPH AT							
+		RESTUB	180.	12.67	37.	9.	3.	3.64
	2 COMBINED AT							
+		CPIPE3	1106.	12.92	969.	733.	542.	4.34
	ROUTED TO							
+		ROPIP4	1100.	12.92	968.	733.	541.	4.34
	2 COMBINED AT							
+		C_FLOW	2089.	14.42	1238.	799.	562.	12.35
	ROUTED TO							
+		66T70A	2065.	14.58	1237.	799.	562.	12.35
	HYDROGRAPH AT							
+		RD66	76.	12.42	76.	64.	22.	3.33
	ROUTED TO							
+		RT404A	76.	13.42	76.	64.	22.	3.33
	HYDROGRAPH AT							
+		67E	421.	12.75	72.	19.	6.	.58
	DIVERSION TO							
+		DIV67E	360.	12.58	31.	8.	3.	.58
	HYDROGRAPH AT							
+		D67E	421.	12.75	42.	11.	4.	.58
	2 COMBINED AT							
+		CP67E	463.	12.75	117.	74.	26.	.58
	ROUTED TO							
+		67T68	398.	13.17	116.	74.	26.	.58
	HYDROGRAPH AT							
+		62A	230.	12.67	35.	10.	3.	.38
	ROUTED TO							
+		62ATC	205.	12.75	35.	10.	3.	.38
	HYDROGRAPH AT							
+		62C	600.	12.33	69.	19.	6.	.55
	DIVERSION TO							
+		DIV62C	565.	12.25	32.	9.	3.	.55
	HYDROGRAPH AT							
+		D62C	598.	12.33	40.	11.	4.	.55
	2 COMBINED AT							
+		CP62C	680.	12.33	75.	20.	7.	.93
	ROUTED TO							
+		62CTE	671.	12.42	75.	20.	7.	.93
	HYDROGRAPH AT							
+		62E	137.	12.42	16.	4.	1.	.15
	2 COMBINED AT							

+	C62CE	803.	12.42	91.	24.	8.	1.08
+ HYDROGRAPH AT	61A	410.	12.50	56.	16.	5.	.52
+ DIVERSION TO	DIV61A	395.	12.42	27.	7.	2.	.52
+ HYDROGRAPH AT	D61A	373.	12.58	31.	8.	3.	.52
+ ROUTED TO	61ATB	219.	13.25	31.	8.	3.	.52
+ HYDROGRAPH AT	61B	663.	12.75	112.	30.	10.	1.09
+ DIVERSION TO	DIV61B	663.	12.75	88.	23.	8.	1.09
+ HYDROGRAPH AT	D61B	321.	13.17	28.	7.	2.	1.09
+ 2 COMBINED AT	CP61B	493.	13.25	56.	15.	5.	1.61
+ ROUTED TO	61T62E	394.	13.42	56.	15.	5.	1.61
+ 2 COMBINED AT	CP62E	803.	12.42	147.	40.	13.	2.69
+ ROUTED TO	62T68A	713.	12.58	139.	38.	13.	2.69
+ HYDROGRAPH AT	68A1	242.	12.58	35.	9.	3.	.30
+ 3 COMBINED AT	CP68A1	967.	12.58	276.	120.	41.	3.57
+ HYDROGRAPH AT	68A2	55.	12.33	6.	1.	0.	.05
+ 2 COMBINED AT	CP68A2	993.	12.58	281.	121.	42.	3.62
+ ROUTED TO	68T70A	846.	12.83	280.	121.	42.	3.62
+ HYDROGRAPH AT	70A1	102.	12.08	13.	4.	1.	.05
+ HYDROGRAPH AT	23	193.	12.58	28.	7.	2.	.22
+ 4 COMBINED AT	CP70A1	2258.	14.50	1474.	915.	602.	16.23
+ ROUTED TO	70A1T2	2235.	14.67	1472.	915.	602.	16.23
+ HYDROGRAPH AT	70A2	79.	12.08	9.	3.	1.	.04
+ HYDROGRAPH AT	24	225.	12.58	32.	8.	3.	.25
+ 3 COMBINED AT	CP70A2	2235.	14.67	1487.	924.	605.	16.52
+ ROUTED TO	70T76A	2197.	14.92	1484.	924.	605.	16.52
+ HYDROGRAPH AT	76A	807.	14.00	303.	77.	26.	1.91
+ 2 COMBINED AT	C76A	2610.	14.83	1730.	990.	627.	18.43
+ ROUTED TO	76ATPR	2573.	15.08	1725.	990.	627.	18.43
+ 2 COMBINED AT	EMFSTN	5181.	13.92	2881.	1383.	771.	40.35
+ ROUTED TO	KNXTRY	5056.	14.08	2873.	1383.	771.	40.35
+ HYDROGRAPH AT	73A	363.	13.42	94.	23.	8.	.95
+ ROUTED TO	73ATB	340.	13.58	94.	23.	8.	.95

+	HYDROGRAPH AT	73B	747.	12.08	68.	20.	7.	.95
+	DIVERSION TO	73BRET	747.	12.08	68.	20.	7.	.95
+	HYDROGRAPH AT	RET73B	4.	20.75	2.	1.	0.	.95
+	2 COMBINED AT	CP73B	340.	13.58	94.	24.	8.	1.89
+	ROUTED TO	73BTC	313.	13.92	91.	23.	8.	1.89
+	HYDROGRAPH AT	73C	822.	12.25	94.	28.	9.	.58
+	DIVERSION TO	73CRET	822.	12.25	70.	19.	6.	.58
+	HYDROGRAPH AT	RET73C	501.	12.42	33.	10.	3.	.58
+	2 COMBINED AT	CP73C	419.	12.42	121.	32.	11.	2.48
+	ROUTED TO	73T74C	327.	14.17	118.	32.	11.	2.48
+	HYDROGRAPH AT	74A	290.	13.33	75.	19.	6.	.75
+	ROUTED TO	74ATB	288.	13.42	75.	19.	6.	.75
+	HYDROGRAPH AT	74B	455.	12.25	55.	16.	5.	.33
+	DIVERSION TO	74BRET	455.	12.25	33.	9.	3.	.33
+	HYDROGRAPH AT	RET74B	382.	12.33	27.	8.	3.	.33
+	2 COMBINED AT	CP74B	437.	12.33	101.	26.	9.	1.09
+	ROUTED TO	74BTC	401.	12.42	101.	26.	9.	1.09
+	HYDROGRAPH AT	74C	516.	12.25	62.	18.	6.	.34
+	DIVERSION TO	74CRET	516.	12.25	42.	11.	4.	.34
+	HYDROGRAPH AT	RET74C	360.	12.42	25.	7.	2.	.34
+	3 COMBINED AT	CP74C	697.	12.42	234.	63.	21.	3.91
+	ROUTED TO	74CT75	510.	12.67	232.	63.	21.	3.91
+	HYDROGRAPH AT	75	261.	14.75	96.	25.	8.	4.01
+	2 COMBINED AT	CP75	661.	14.42	308.	83.	28.	7.92
+	ROUTED TO	75TCP	657.	14.50	308.	83.	28.	7.92
+	HYDROGRAPH AT	77A	548.	13.75	167.	42.	14.	1.74
+	ROUTED TO	77ATB	518.	13.83	166.	42.	14.	1.74
+	HYDROGRAPH AT	77B	532.	12.17	47.	14.	5.	.35
+	DIVERSION TO	77BRET	204.	11.92	11.	3.	1.	.35
+	HYDROGRAPH AT	RET77B	532.	12.17	39.	10.	3.	.35
+	2 COMBINED AT	CP77B	551.	12.17	204.	52.	17.	2.09
+	ROUTED TO	77BTC	513.	14.08	203.	52.	17.	2.09

	HYDROGRAPH AT							
+		77C	407.	12.25	46.	14.	5.	.28
	DIVERSION TO							
+		77CRET	407.	12.25	31.	8.	3.	.28
	HYDROGRAPH AT							
+		RET77C	280.	12.33	19.	5.	2.	.28
	2 COMBINED AT							
+		C77C	694.	12.42	220.	57.	19.	2.37
	ROUTED TO							
+		77CT78	536.	12.67	220.	57.	19.	2.37
	HYDROGRAPH AT							
+		78A	592.	13.67	180.	45.	15.	1.88
	ROUTED TO							
+		78ATB	523.	14.42	180.	45.	15.	1.88
	HYDROGRAPH AT							
+		78B	558.	12.25	56.	16.	5.	.40
	2 COMBINED AT							
+		CP78B	565.	12.25	233.	60.	20.	2.28
	ROUTED TO							
+		78BTC	518.	14.75	233.	60.	20.	2.28
	HYDROGRAPH AT							
+		78C	475.	12.17	40.	10.	3.	.29
	DIVERSION TO							
+		78CRET	80.	11.83	4.	1.	0.	.29
	HYDROGRAPH AT							
+		RET78C	475.	12.17	37.	9.	3.	.29
	2 COMBINED AT							
+		C78C	775.	12.17	268.	69.	23.	2.57
	2 COMBINED AT							
+		C78C2	984.	12.58	476.	123.	41.	4.93
	ROUTED TO							
+		78CT79	927.	14.75	474.	123.	41.	4.93
	HYDROGRAPH AT							
+		79A4	261.	13.00	66.	20.	7.	.38
	2 COMBINED AT							
+		C79B1	1090.	12.83	533.	142.	47.	5.31
	HYDROGRAPH AT							
+		79A1	90.	13.17	24.	8.	3.	.20
	HYDROGRAPH AT							
+		79A2	225.	12.50	35.	10.	3.	.23
	HYDROGRAPH AT							
+		79A3	156.	12.58	28.	8.	3.	.16
	3 COMBINED AT							
+		C79B2	417.	12.50	87.	26.	9.	.58
	HYDROGRAPH AT							
+		79A	645.	13.25	155.	39.	13.	1.07
	3 COMBINED AT							
+		C79A	1726.	12.83	747.	200.	67.	6.96
	HYDROGRAPH AT							
+		79B	672.	13.08	161.	40.	13.	1.00
	2 COMBINED AT							
+		C79A2	2227.	13.00	888.	235.	78.	7.96
	HYDROGRAPH AT							
+		78F	1138.	14.00	388.	98.	33.	4.19
	ROUTED TO							
+		78FTD	1031.	14.58	388.	98.	33.	4.19
	HYDROGRAPH AT							
+		78D	742.	12.75	132.	35.	12.	.89
	2 COMBINED AT							
+		C78D	1040.	14.58	511.	131.	44.	5.08
	HYDROGRAPH AT							
+		82B	1104.	12.33	166.	54.	18.	.92
	DIVERSION TO							

+	TRW	1104.	12.33	166.	54.	18.	.92
+ HYDROGRAPH AT	DTTRW	0.	.00	0.	0.	0.	.92
+ 2 COMBINED AT	C78D2	1040.	14.58	511.	131.	44.	6.00
+ HYDROGRAPH AT	82A4	662.	13.83	211.	54.	18.	2.13
+ ROUTED TO	R82A4	618.	14.00	211.	54.	18.	2.13
+ HYDROGRAPH AT	82A3	528.	14.17	183.	46.	15.	2.02
+ 2 COMBINED AT	C82A3	1118.	14.08	386.	98.	33.	4.15
+ ROUTED TO	RC82A3	1079.	14.25	386.	98.	33.	4.15
+ HYDROGRAPH AT	CAP2	64.	20.00	64.	64.	64.	.01
+ ROUTED TO	RCAP2	64.	23.83	64.	64.	64.	.01
+ HYDROGRAPH AT	82A2	850.	14.83	310.	78.	26.	4.13
+ 2 COMBINED AT	C82A2	882.	14.83	342.	132.	87.	4.14
+ HYDROGRAPH AT	82A1	1099.	13.50	298.	75.	25.	3.12
+ 3 COMBINED AT	C82A	2078.	14.25	953.	286.	138.	11.41
+ ROUTED TO	82ATD	2053.	14.58	952.	285.	138.	11.41
+ 2 COMBINED AT	C78D3	2949.	14.58	1388.	396.	175.	17.41
+ ROUTED TO	78DTE	2874.	14.92	1386.	395.	174.	17.41
+ HYDROGRAPH AT	78E	844.	12.75	158.	40.	13.	1.01
+ 2 COMBINED AT	C78E	2874.	14.92	1520.	429.	186.	18.42
+ HYDROGRAPH AT	83	398.	13.17	91.	23.	8.	1.01
+ 2 COMBINED AT	C78E2	2880.	14.92	1586.	446.	191.	19.43
+ ROUTED TO	78ET84	2827.	15.42	1576.	445.	191.	19.43
+ HYDROGRAPH AT	84	349.	13.25	83.	21.	7.	.99
+ 2 COMBINED AT	C84	2827.	15.42	1632.	460.	196.	20.42
+ ROUTED TO	EC-4	2811.	15.50	1625.	459.	196.	20.42
+ 2 COMBINED AT	C79B3	3455.	15.17	2364.	658.	262.	28.37
+ ROUTED TO	EC-3	3442.	15.33	2356.	658.	262.	28.37
+ ROUTED TO	EC-2	3426.	15.50	2341.	657.	262.	28.37
+ ROUTED TO	EC-1	3412.	15.58	2326.	656.	261.	28.37
+ 2 COMBINED AT	CPPWR	3645.	15.50	2522.	711.	280.	36.29
+ ROUTED TO	CPT80A	3638.	15.58	2506.	710.	279.	36.29
+ HYDROGRAPH AT	80A	2427.	12.75	595.	189.	63.	2.64

	2 COMBINED AT							
+		CPOWER	3695.	15.58	2836.	850.	326.	38.93
	2 COMBINED AT							
+		EMFPOW	8093.	14.08	5321.	2136.	1064.	79.28
	ROUTED TO							
+		POWTWI	8050.	14.25	5316.	2135.	1064.	79.28
	HYDROGRAPH AT							
+		80B	1269.	12.50	226.	72.	24.	1.12
	HYDROGRAPH AT							
+		81B	613.	12.67	118.	36.	12.	.84
	2 COMBINED AT							
+		80B81B	1736.	12.50	340.	106.	36.	1.96
	2 COMBINED AT							
+		EMFWIL	8126.	14.25	5465.	2209.	1089.	81.24
	ROUTED TO							
+		WILTSP	8015.	14.42	5448.	2209.	1089.	81.24
	HYDROGRAPH AT							
+		85	364.	13.17	83.	22.	7.	1.00
	ROUTED TO							
+		85T86	331.	13.42	83.	22.	7.	1.00
	HYDROGRAPH AT							
+		86	354.	13.25	81.	21.	7.	1.00
	2 COMBINED AT							
+		C86	639.	13.33	160.	42.	14.	2.01
	ROUTED TO							
+		86T91	580.	13.83	160.	42.	14.	2.01
	HYDROGRAPH AT							
+		87A	269.	12.75	45.	11.	4.	.49
	ROUTED TO							
+		87ATB	226.	13.25	45.	11.	4.	.49
	HYDROGRAPH AT							
+		87B	240.	12.92	43.	11.	4.	.49
	2 COMBINED AT							
+		C87	400.	13.00	88.	22.	7.	.98
	ROUTED TO							
+		87T88B	339.	14.08	87.	22.	7.	.98
	HYDROGRAPH AT							
+		88A	319.	12.58	44.	11.	4.	.50
	ROUTED TO							
+		88ATB	262.	12.92	44.	11.	4.	.50
	HYDROGRAPH AT							
+		88B	274.	12.83	49.	13.	4.	.50
	2 COMBINED AT							
+		C88B	519.	12.92	93.	24.	8.	1.00
	2 COMBINED AT							
+		C88	681.	12.92	176.	45.	15.	1.98
	ROUTED TO							
+		88T89	593.	13.83	176.	45.	15.	1.98
	HYDROGRAPH AT							
+		89A	215.	12.92	39.	10.	3.	.50
	ROUTED TO							
+		89ATB	172.	13.58	39.	10.	3.	.50
	HYDROGRAPH AT							
+		89B	251.	12.83	41.	10.	3.	.50
	2 COMBINED AT							
+		C89B	258.	12.83	80.	20.	7.	.99
	2 COMBINED AT							
+		C89	770.	13.75	250.	64.	21.	2.98
	ROUTED TO							
+		89T90	695.	14.92	250.	64.	21.	2.98
	HYDROGRAPH AT							
+		90A	370.	12.42	38.	10.	3.	.48
	ROUTED TO							
+		90ATB	196.	13.50	38.	10.	3.	.48

+	HYDROGRAPH AT	90B	405.	13.08	94.	26.	9.	.82
+	2 COMBINED AT	C90B	470.	13.33	131.	35.	12.	1.30
+	HYDROGRAPH AT	SUB258	1024.	13.50	462.	136.	45.	3.65
+	ROUTED TO	RO259	952.	15.17	459.	136.	45.	3.65
+	HYDROGRAPH AT	SUB260	569.	12.75	124.	31.	10.	.98
+	2 COMBINED AT	CO262	955.	15.17	561.	165.	55.	4.63
+	ROUTED TO	RO263	908.	16.75	554.	165.	55.	4.63
+	HYDROGRAPH AT	SUB264	528.	12.75	124.	31.	10.	1.00
+	2 COMBINED AT	CO266	908.	16.67	615.	195.	65.	5.63
+	ROUTED TO	RO267	778.	19.92	581.	193.	65.	5.63
+	HYDROGRAPH AT	SUB268	314.	13.25	119.	32.	11.	.97
+	2 COMBINED AT	CO270	778.	19.92	588.	223.	75.	6.60
+	ROUTED TO	RO283	725.	22.67	571.	221.	74.	6.60
+	3 COMBINED AT	C90	829.	13.50	559.	303.	102.	10.88
+	ROUTED TO	90T91	815.	15.17	558.	303.	102.	10.88
+	HYDROGRAPH AT	91	223.	13.00	43.	11.	4.	.46
+	3 COMBINED AT	CP91	1410.	13.67	659.	345.	116.	13.35
+	HYDROGRAPH AT	81A	1585.	12.67	349.	115.	38.	1.81
+	2 COMBINED AT	CP91A	1872.	12.75	934.	441.	151.	15.16
+	ROUTED TO	R91	1824.	12.83	932.	441.	151.	15.16
+	2 COMBINED AT	EMFRIT	8951.	14.42	6134.	2566.	1209.	96.40

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

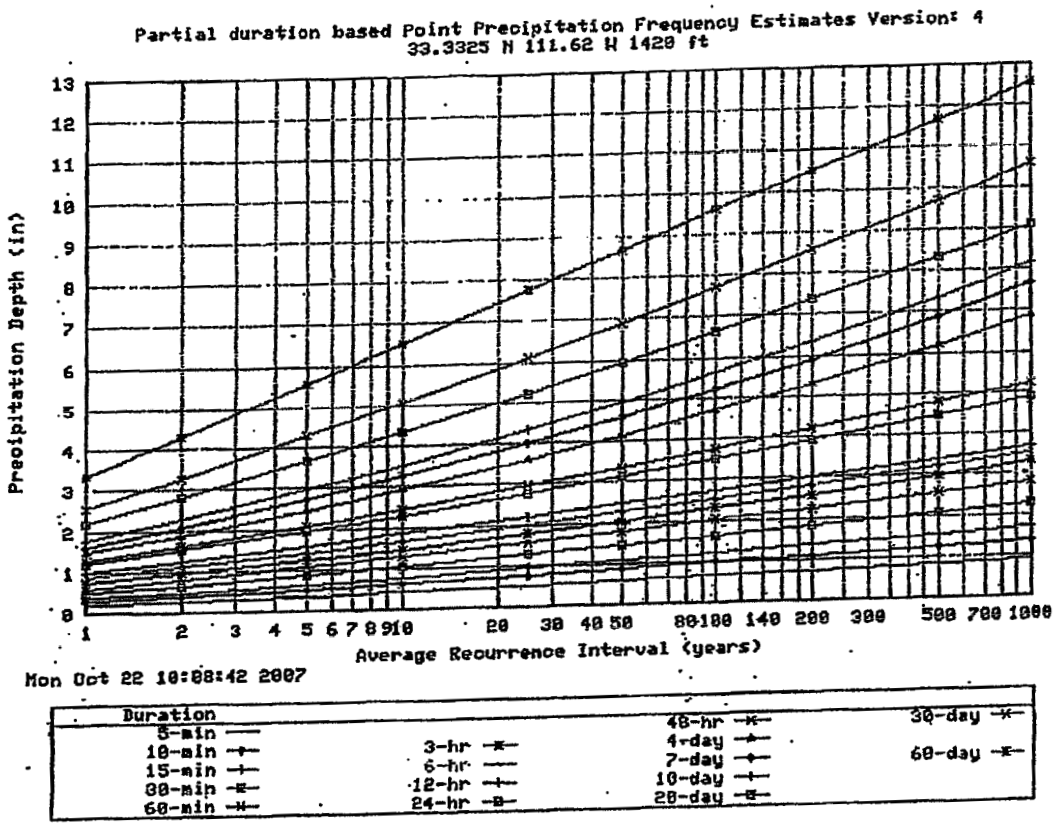
Precipitation Frequency Estimates (inches)

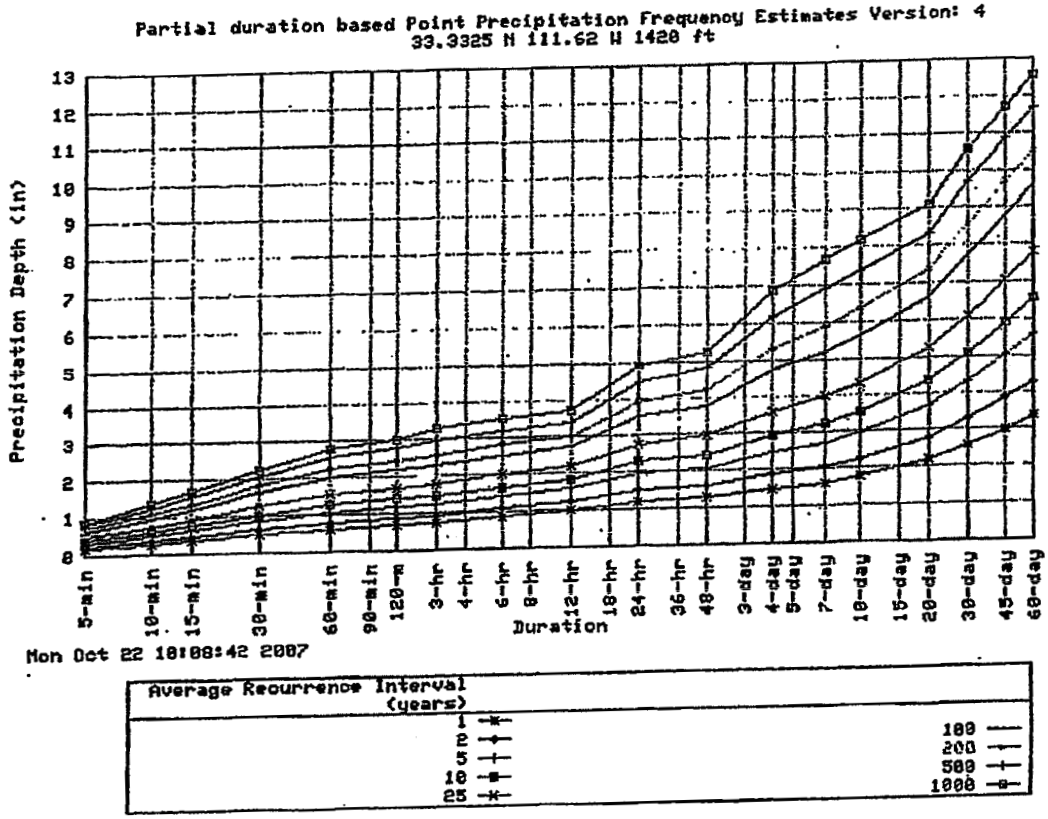
ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.19	0.29	0.36	0.48	0.60	0.68	0.73	0.88	0.99	1.21	1.27	1.47	1.62	1.77	2.19	2.56	2.99	3.33
2	0.25	0.38	0.47	0.63	0.78	0.89	0.93	1.11	1.26	1.52	1.61	1.87	2.07	2.25	2.81	3.28	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)
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**

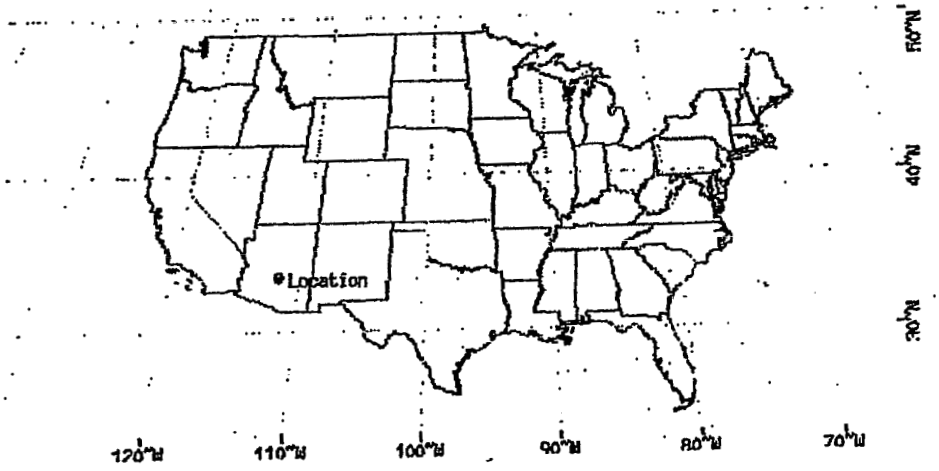
Precipitation Frequency Estimates (inches)

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.

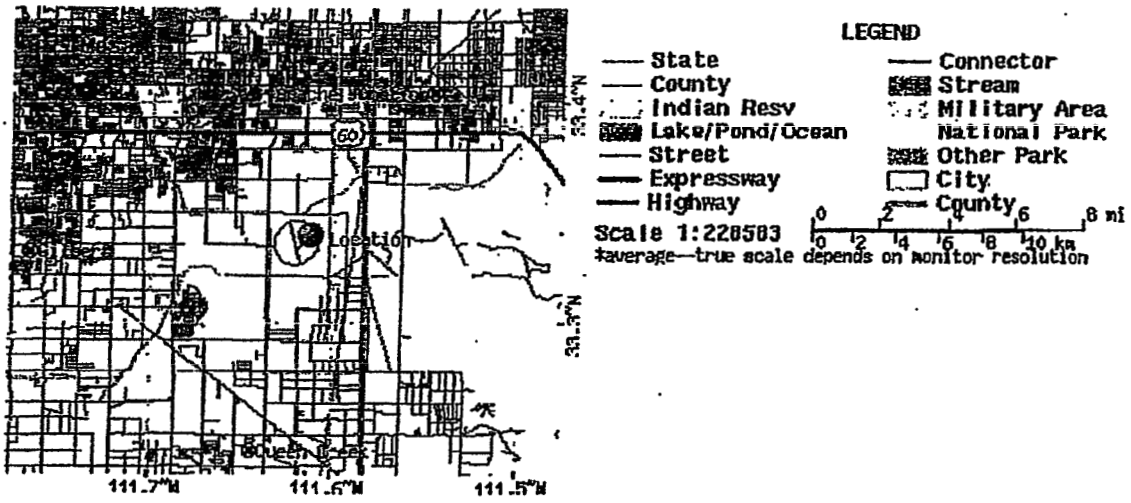
Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

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

Pre-Developed Condition HEC-1 Sub-Basin Data

Table 1 - Existing HEC-1 Sub-Basin Data

Description: Sub-basin data based on aerial photo and topography

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 3.3.2

SUB-BASINS (EAST OF ELLSWORTH ROAD)

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	USGE (ft)	DSGE (ft)	Lca (mi)
73A	26400845	606.08	0.947	12144	2.30	1567.3	1487.0	1.00
73B	11854970	272.15	0.425	2957	0.56	1487.0	1470.0	0.28
73C	16310497	374.44	0.585	7022	1.33	1480.0	1450.0	0.30
74A	21020314	482.56	0.754	12672	2.40	1563.0	1461.7	1.00
74B	9278312	213.00	0.333	6917	1.31	1490.0	1459.0	0.41
74C	9606165	220.53	0.345	6442	1.22	1471.0	1440.0	0.40
75	111652992	2563.20	4.005	21120	4.00	1465.0	1385.0	3.00
77A	48480538	1112.96	1.739	15312	2.90	1559.0	1468.8	1.50
77B	9740171	223.60	0.349	2957	0.56	1469.0	1453.0	0.26
77C	7769721	178.37	0.279	4013	0.76	1457.0	1439.0	0.51
78A	52467149	1204.48	1.882	19536	3.70	1558.0	1452.6	2.10
78B	11047090	253.61	0.396	3168	0.60	1460.0	1441.0	0.40
78C	8018731	184.08	0.288	2640	0.50	1448.0	1432.1	0.30
79A1	5573617	127.95	0.1999	8237	1.56	1435.0	1392.0	0.98
79A2	6371618	146.27	0.2285	3696	0.70	1430.0	1409.0	0.34
79A3	4316890	99.10	0.1548	3115	0.59	1426.0	1411.0	0.55
79A4	10483383	240.67	0.3760	8078	1.53	1435.0	1410.0	0.56
79A	29746253	682.88	1.067	7524	1.43	1411.0	1390.0	0.82

SUB-BASINS (WEST OF ELLSWORTH ROAD)

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	USGE (ft)	DSGE (ft)	Lca (mi)
23	6088253	139.77	0.218	3767	0.71	1405.0	1391.0	0.36
24	7031535	161.42	0.252	3967	0.75	1400.0	1380.0	0.38
25	5794910	133.03	0.208	4355	0.82	1390.0	1375.0	0.41
26	1264710	29.03	0.045	2028	0.38	1389.0	1380.0	0.19
68A1	8293239	190.39	0.297	4843	0.92	1425.7	1391.0	0.46
68A2	1336285	30.68	0.048	2634	0.50	1410.9	1392.0	0.25
68B1	4078185	93.62	0.146	3951	0.75	1402.2	1378.0	0.38
68B2	1681764	38.61	0.060	2916	0.55	1395.8	1378.0	0.28
68B3	989689	22.72	0.036	1916	0.36	1392.6	1381.0	0.18
70A1	1491048	34.23	0.053	2750	0.52	1392.0	1390.0	0.26
70A2	994745	22.84	0.036	2700	0.51	1390.0	1380.0	0.26
70B	9099867	208.90	0.326	8448	1.60	1390.0	1342.0	1.10
71	23991985	550.78	0.861	8448	1.60	1378.0	1335.8	0.80

Pre-Developed Condition HEC-1 Soil Data

Table 2 - Existing HEC-1 - Soils Data

Description: Existing Condition Soil Data

Location 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.)
23	50	Estrella Loams	40.58	0.0634
	55	Gillman Loams	9.09	0.0142
	77	Mohall Clay Loam	66.95	0.1046
	112	Tremant Gravelly Sandy Loams	23.20	0.0363
		TOTAL	**139.82**	**0.2185**
24	77	Mohall Clay Loam	103.31	0.1614
	79	Mohall Clay	37.93	0.0593
	112	Tremant Gravelly Sandy Loams	20.18	0.0315
		TOTAL	**161.42**	**0.2522**
25	50	Estrella Loams	87.80	0.1372
	55	Gillman Loams	2.13	0.0033
	76	Mohall Loam, Calcareous Solum	4.52	0.0071
	77	Mohall Clay Loam	14.50	0.0227
	112	Tremant Gravelly Sandy Loams	24.08	0.0376
		TOTAL	**133.03**	**0.2079**
26	50	Estrella Loams	2.87	0.0045
	77	Mohall Clay Loam	6.53	0.0102
	112	Tremant Gravelly Sandy Loams	19.63	0.0307
		TOTAL	**29.03**	**0.0454**
73A	N/A	No Data Available	606.08	0.9470
		TOTAL	**606.08**	**0.9470**
73B	1	Antho Sandy Loams	73.75	0.1152
	50	Estrella Loams	10.61	0.0166
	55	Gilman Loams	15.78	0.0247
	75	Mohall Loam	62.59	0.0978
	77	Mohall Clay Loam	80.28	0.1254
	112	Tremant Gravelly Sandy Loams	29.14	0.0455
		TOTAL	**272.15**	**0.4252**
73C	1	Antho Sandy Loams	76.01	0.1188
	50	Estrella Loams	85.37	0.1334
	75	Mohall Loam	128.81	0.2013
	77	Mohall Clay Loam	84.25	0.1316
		TOTAL	**374.44**	**0.5851**
74A	N/A	No Data Available	482.56	0.7540
		TOTAL	**482.56**	**0.7540**
74B	1	Antho Sandy Loams	112.04	0.1751
	77	Mohall Clay Loam	97.34	0.1521
	112	Tremant Gravelly Sandy Loams	3.62	0.0057
		TOTAL	**213.00**	**0.3329**
74C	1	Antho Sandy Loams	55.57	0.0868
	50	Estrella Loams	11.47	0.0179
	77	Mohall Clay Loam	136.29	0.2130
	112	Tremant Gravelly Sandy Loams	16.76	0.0262
	115	Tremant-Antho Complex, 1-5 %Slopes	0.44	0.0007
		TOTAL	**220.53**	**0.3446**

Sub-Basin ID	Soil Id	Soil Type	Area (acres)	Area (sq. mi.)
75	1	Antho Sandy Loams	30.76	0.0481
	2	Antho Gravelly Sandy Loams	12.82	0.0200
	50	Estrella Loams	215.31	0.3364
	55	Gilman Loams	2.56	0.0040
	75	Mohall Loam	833.04	1.3016
	77	Mohall Clay Loam	966.33	1.5099
	78	Mohall Clay Loam, Calcareous Solum	87.15	0.1362
	79	Mohall Clay	176.86	0.2763
	112	Tremant Gravelly Sandy Loams	238.37	0.3725
		TOTAL	**2563.20**	**4.0050**
77A	N/A	No Data Available	1112.96	1.7390
		TOTAL	**1112.96**	**1.7390**
77B	1	Antho Sandy Loams	76.92	0.1202
	77	Mohall Clay Loam	81.39	0.1272
	112	Tremant Gravelly Sandy Loams	65.29	0.1020
		TOTAL	**223.60**	**0.3494**
77C	1	Antho Sandy Loams	4.82	0.0075
	77	Mohall Clay Loam	74.56	0.1165
	78	Mohall Clay Loam, Calcareous Solum	9.10	0.0142
	112	Tremant Gravelly Sandy Loams	89.54	0.1399
	115	Tremant-Antho Complex, 1-5 %Slopes	0.35	0.0005
		TOTAL	**178.37**	**0.2786**
78A	N/A	No Data Available	1204.48	1.8820
		TOTAL	**1204.48**	**1.8820**
78B	22	Contine Clay Loam	66.95	0.1046
	77	Mohall Clay Loam	79.63	0.1244
	112	Tremant Gravelly Sandy Loams	107.03	0.1672
		TOTAL	**253.61**	**0.3962**
78C	22	Contine Clay Loam	128.67	0.2010
	77	Mohall Clay Loam	2.76	0.0043
	112	Tremant Gravelly Sandy Loams	52.65	0.0823
		TOTAL	**184.08**	**0.2876**
79A1	2	Antho Gravelly Sandy Loams	16.38	0.0256
	50	Estrella Loams	8.06	0.0126
	55	Gilman Loams	7.17	0.0112
	78	Mohall Clay Loam, Calcareous Solum	0.13	0.0002
	112	Tremant Gravelly Sandy Loams	96.21	0.1503
		TOTAL	**127.95**	**0.1999**
79A2	1	Antho Sandy Loams	0.58	0.0009
	2	Antho Gravelly Sandy Loams	14.63	0.0229
	50	Estrella Loams	54.85	0.0857
	78	Mohall Clay Loam, Calcareous Solum	74.74	0.1168
	115	Tremant-Antho Complex, 1-5 %Slopes	1.47	0.0023
		TOTAL	**146.27**	**0.2286**

Sub-Basin ID	Soil Id	Soil Type	Area (acres)	Area (sq. mi.)
79A3	22	Contine Clay Loam	32.70	0.0511
	77	Mohall Clay Loam	32.60	0.0509
	78	Mohall Clay Loam, Calcareous Solum	31.51	0.0492
	112	Tremant Gravelly Sandy Loams	1.49	0.0023
	115	Tremant-Antho Complex, 1-5 %Slopes	0.80	0.0013
		TOTAL	**99.10**	**0.1548**
79A4	1	Antho Sandy Loams	3.85	0.0060
	22	Contine Clay Loam	89.53	0.1399
	50	Estrella Loams	16.61	0.0260
	77	Mohall Clay Loam	43.80	0.0684
	78	Mohall Clay Loam, Calcareous Solum	23.59	0.0369
	112	Tremant Gravelly Sandy Loams	52.71	0.0824
	115	Tremant-Antho Complex, 1-5 %Slopes	10.58	0.0165
		TOTAL	**240.67**	**0.3761**
79A	2	Antho Gravelly Sandy Loams	4.78	0.0075
	22	Contine Clay Loam	226.03	0.3532
	76	Mohall Loam, Calcareous Solum	7.51	0.0117
	77	Mohall Clay Loam	62.82	0.0982
	78	Mohall Clay Loam, Calcareous Solum	219.89	0.3436
	112	Tremant Gravelly Sandy Loams	161.85	0.2529
		TOTAL	**682.88**	**1.0671**
68A1	50	Estrella Loams	55.97	0.0875
	55	Gillman Loams	57.12	0.0893
	77	Mohall Clay Loam	60.54	0.0946
	112	Tremant Gravelly Sandy Loams	16.74	0.0262
		TOTAL	**190.37**	**0.2976**
68A2	50	Estrella Loams	18.01	0.0281
	55	Gillman Loams	12.43	0.0194
	77	Mohall Clay Loam	0.24	0.0004
		TOTAL	**30.68**	**0.0479**
68B1	50	Estrella Loams	20.88	0.0326
	55	Gillman Loams	1.03	0.0016
	77	Mohall Clay Loam	15.92	0.0249
	112	Tremant Gravelly Sandy Loams	55.79	0.0872
		TOTAL	**93.62**	**0.1463**
68B2	50	Estrella Loams	23.20	0.0363
	77	Mohall Clay Loam	15.41	0.0241
		TOTAL	**38.61**	**0.0604**
68B3	50	Estrella Loams	20.18	0.0315
	77	Mohall Clay Loam	2.54	0.0040
		TOTAL	**22.72**	**0.0355**
70A1	50	Estrella Loams	17.94	0.0280
	77	Mohall Clay Loam	10.54	0.0165
	112	Tremant Gravelly Sandy Loams	5.75	0.0090
		TOTAL	**34.23**	**0.0535**
70A2	77	Mohall Clay Loam	20.26	0.0317
	112	Tremant Gravelly Sandy Loams	2.58	0.0040
		TOTAL	**22.84**	**0.0357**

Pre-Developed Condition HEC-1 Land Use Data

Table 3 - Existing HEC-1 Land Use Data

Description: Land use data based on existing development and aerial photos

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 3.3.2

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Land Use	Land Use Area (sq. mi.)
23	6088253	139.77	0.2184	Passive Open Space	0.2184
24	7031535	161.42	0.2522	Passive Open Space	0.2522
25	5794910	133.03	0.2079	Passive Open Space	0.2079
26	1264710	29.03	0.0454	Passive Open Space	0.0454
73A	26400845	606.08	0.9470	Passive Open Space	0.8499
73B	11854970	272.15	0.4252	Small Lot Residential (4-6 DU/Acre)	0.4252
73C	16310497	374.44	0.5851	Small Lot Residential (4-6 DU/Acre)	0.5851
74A	21020314	482.56	0.7540	Passive Open Space	0.7887
74B	9278312	213.00	0.3328	Small Lot Residential (4-6 DU/Acre)	0.3494
74C	9606165	220.53	0.3446	Small Lot Residential (4-6 DU/Acre)	0.2787
75	111652992	2563.20	4.0050	Other Employment - Low	4.0050
77A	48480538	1112.96	1.7390	Passive Open Space	1.6948
77B	9740171	223.60	0.3494	Medium Lot Residential (2-4 DU/Acre)	0.1429
				Estate Residential (1/5 - 1 DU/Acre)	0.2065
77C	7769721	178.37	0.2787	Small Lot Residential (4-6 DU/Acre)	0.2787
78A	52467149	1204.48	1.8820	Passive Open Space	1.9671
78B	11047090	253.61	0.3963	Estate Residential (1/5 - 1 DU/Acre)	0.3963
78C	8018731	184.08	0.2876	Passive Open Space	0.1684
				Medium Lot Residential (2-4 DU/Acre)	0.0354
				Estate Residential (1/5 - 1 DU/Acre)	0.0838
79A1	5573617	127.95	0.1999	Other Employment - Low	0.1999
79A2	6371618	146.27	0.2285	Other Employment - Low	0.2285
79A3	4316890	99.10	0.1548	Other Employment - Low	0.1548
79A4	10483383	240.67	0.3760	Other Employment - Low	0.3760
79A	29746253	682.88	1.0670	Other Employment - Low	1.0670
68A1	8293239	190.39	0.2975	Passive Open Space	0.2975
68A2	1336285	30.68	0.0479	Passive Open Space	0.0479
68B1	4078185	93.62	0.1463	Passive Open Space	0.1463
68B2	1681764	38.61	0.0603	Passive Open Space	0.0603
68B3	989689	22.72	0.0355	Passive Open Space	0.0355
70A1	1491048	34.23	0.0535	General Transportation	0.0535
70A2	994745	22.84	0.0357	General Transportation	0.0357

Pre-Developed Condition HEC-1 Routing Data

Table 4 - Existing HEC-1 Routing Data

Description: Routing parameters based on existing channels and drainage corridors

Location Eastmark - East Mesa, Arizona
East Mesa, Arizona

Reference: DDMSW Version 3.3.2

Routing ID	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
73ATB	0.060	0.050	0.060	2830.00	0.0050	0.0	5.00	10	20	120	130	135	140	2.50	2.50	2.50	0.00	0.00	2.50	2.50	2.50
73BTC	0.045	0.035	0.045	4500.00	0.0050	0.0	5.00	10	22	122	134	139	144	3.00	3.00	3.00	0.00	0.00	3.00	3.00	3.00
73T74C	0.035	0.022	0.035	3500.00	0.0034	0.0	500.00	1000	1001	1016	1516	2016	2516	6	5.50	5.00	2.00	2.00	3.50	4.50	5.50
74ATB	0.030	0.013	0.030	3200.00	0.0060	0.0	7.00	21.5	30	36	44.5	59	66	5.00	5.50	5.50	0.00	0.00	5.50	5.50	5.00
74BTC	0.030	0.013	0.030	3100.00	0.0055	0.0	7.00	21.5	30	36	44.5	59	66	5.00	5.50	5.50	0.00	0.00	5.50	5.50	5.00
74CT75	0.030	0.013	0.030	10700.00	0.0045	0.0	5.60	20.1	30	29	49.9	69.4	75	6.25	7.25	7.25	0.00	0.00	7.25	7.25	6.25
77ATB	0.045	0.040	0.045	3000.00	0.0060	0.0	500.00	980	1003	1007	1031	1511	2011	4.00	3.50	3.00	0.00	0.00	3.00	3.50	4.00
77BTC	0.045	0.040	0.045	4750.00	0.0042	0.0	500.00	950	1003	1007	1061	1511	2011	4.00	3.50	3.00	0.00	0.00	3.00	3.50	4.00
77CT78	0.035	0.022	0.035	2400.00	0.0020	0.0	100.00	110	115	120	125	130	135	4.00	3.00	2.50	0.00	0.00	2.50	8.00	9.00
78ATB	0.045	0.040	0.045	3500.00	0.0042	0.0	500.00	980	1003	1007	1031	1511	2011	4.50	3.50	3.00	0.00	0.00	3.00	3.50	4.50
78BTC	0.035	0.022	0.035	4500.00	0.0033	0.0	100.00	110	115	120	125	130	135	5.00	4.00	3.50	0.00	0.00	3.50	8.00	9.00
78CT79	0.035	0.022	0.035	10560.00	0.0044	0.0	500.00	800	805	820	825	1125	1625	7.00	6.00	5.00	0.00	0.00	5.00	6.00	7.00
70A1T2	0.025	0.025	0.025	2675.00	0.0005	0.0	8.0	16.0	59.0	91.0	134.0	142.0	150.0	7.40	7.30	7.20	0.00	0.00	7.20	7.10	7.00
68T70A	0.030	0.030	0.030	3960.00	0.0006	0.0	5.0	10.0	20.0	30.0	40.0	45.0	50.0	10.00	5.00	4.00	0.00	0.00	4.00	5.00	10.00
25T71	0.045	0.040	0.045	5686.00	0.0050	0.0	500.0	1000.0	1003.0	1007.0	1011.0	1511.0	2011.0	3.00	2.50	2.00	0.00	0.00	2.00	2.50	3.00
26T70B	0.045	0.040	0.045	4688.00	0.0057	0.0	500.0	1000.0	1003.0	1007.0	1011.0	1511.0	2011.0	3.00	2.50	2.00	0.00	0.00	2.00	2.50	3.00

Offsite Retention Updates for HEC-1

Table 5 - Existing Condition HEC-1 - Offsite Retention Updates

Description: Retention provided by existing developments

Location Eastmark - East Mesa, Arizona

Reference: Final Drainage Report for Mountain Horizons (North of the Powerline Floodway
Final Drainage Report for Mountain Horizons (South of the Powerline Floodway
Drainage Report for Mass Grading of Nova Vista (Signal Butte Rd & Elliot Rd)
Final Drainage Report for Gila River Ranches (Warner and Meridian)
Drainage Report for Mountain Heights
Final Drainage Report for Keighley Place

Watershed	Development	Basin ID	Retention Required (acre-ft)	Total Retention Required (acre-ft)	Account for 80% in HEC-1 (acre-ft)	Total Volume To HEC-1 (acre-ft)
73B	Mountain Ranch	A2	7.11	32.0	25.6	39.5
		A1	2.87			
		OS1	2.07			
		C1	4.06			
		C2	3.15			
		C3	0.53			
		D1	4.49			
		D2	2.44			
		OS2	1.68			
		OS3	1.62			
		OS4	1.96			
	Mountain Heights	A	2.90	9.6	7.7	
		B	1.18			
		C	0.59			
		D	0.61			
		E	3.56			
		F	0.78			
	Stratsford Estates	A	4.67	7.7	6.2	
		1/2 B AND C	2.99			
73C	Nova Vista	B1	4.83	31.8	25.4	37.2
		B2	1.51			
		B3	5.29			
		B4	0.49			
		B5	7.15			
		B6	1.77			
		B7	0.73			
		B8	5.14			
		B9	3.58			
		B10	0.54			
		B11	0.36			
		B12	0.06			
		B13	0.14			
		B14	0.11			
		B15	0.07			
		B16	0.04			
	Mountain Horizons (North)	A1	4.80	14.7	11.8	
		B1	4.83			
		C1	5.07			
74B	Gila River Ranches	A, B, C	10.29	19.2	15.4	17.8
		D1, D2	2.28			
		E	2.49			
		F1, F2, F3, F4	2.22			
		K1	0.28			
		K2	0.91			
		M1	0.15			
		M2	0.23			
		N	0.34			
	Stratsford Estates	1/2 B AND C	2.99	3.0	2.4	
74C	Mountain Horizons (North)	D1	5.98	28.3	22.6	22.6
		E1	3.86			
		F1, F2, F3, F4, F5	6.46			
		G1	4.67			
		H1, H2	4.24			
		J1	2.13			
		X1	0.98			
77B	Gila River Ranches	G, H3	3.64	8.0	6.4	6.4
		H1, H2	2.02			
		J1a, J1b, J1c	2.00			
		P	0.22			
		Q	0.11			
	Keighley Place[1]	A-1	0.00	0.0	0.0	
		A-2	0.00			
		G-1	0.00			
		G-2	0.00			
		G-3	0.00			
		G-4	0.00			
		G-5	0.00			
		J	0.00			
77C	Mountain Horizons (South)	A1	3.61	21.0	16.8	16.8
		A2	0.96			
		B1	2.07			
		B2	0.80			
		B3	0.36			
		B4	0.73			
		C1	2.99			
		D1	2.06			
		D2	2.54			
		F2	1.88			
		F3A, F3B	2.95			
78C	Mountain Horizons (South)	E1	0.42	2.7	2.2	2.2
		E2	2.28			
					Total	**142.5**

Notes:
1) Currently a final plat has been approved for Keighley Place but no construction has begun. Retention from the approved final drainage report was **NOT** applied to the existing condition HEC-1 model updates.

APPENDIX B

Post Developed Data and Hydrology

Hydrology Post Developed

100-Year, 24-Hour HEC-1 Output

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1*****************************************                    *****************************************
 *                                       *                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS       *
 *               JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1                *                    *          609 SECOND STREET            *
 *                                       *                    *       DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   17FEB21  TIME  10:33:52   *                    *           (916) 756-1104              *
 *                                       *                    *                                       *
 *****************************************                    *****************************************

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


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

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

1                                                HEC-1 INPUT                                                    PAGE  1

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

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            2            ID    FILE: EM125W.DAT
            3            ID
            4            ID    MODEL REVISED: 2-16-2021
            5            ID
            6            ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 1,2, AND 5W)
            7            ID
            8            ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
            9            ID        FOR THE UNDEVELOPED UNITS, SPECIFICALLY DU 1, DU 2, DU 5E, DU 5W,
           10            ID        DU 6S, AND DU 6N.
           11            ID
           12            ID    MODEL REVISION DESCRIPTION:
           13            ID
           14            ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
           15            ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).COMBINED DU 1, DU 2, AND
           16            ID        DU 5W, WHICH IS CALLED DU 1-2-5W. REVISED BOUNDARY AND LAND USES
           17            ID        WITHIN DU 6N AND DU 6S.REVISED SUBBASINS 8 AND 10 BOUNDARIES TO
           18            ID        REFLECT AS-BUILTS. REVISED LAND USES WITHIN UNDEVLEOPED PARCELS
           19            ID        WITHIN DU 3/4 TO REFLECT MORE DETAILED PLANNING.
           20            ID        THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
           21            ID        DISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N
           22            ID        AND DU 7S.
           23            ID
           24            ID        MODEL REVISED BY:
           25            ID        WOOD, PATEL & ASSOCIATES, INC.
           26            ID        STEVEN MCKEE, P.E.
           27            ID
           28            ID        FILE PATH:
           29            ID        Z:\EASTMARK\2021\215215\PROJECT SUPPORT\REPORTS\DRAINAGE\
           30            ID        OVERALL\HYDROLOGY\PROPOSED\EMDU\EM125W.DAT
           31            ID
           32            ID   ********************************************************************************
           33            ID
           34            ID    FILE: EMDU34.DAT
           35            ID
           36            ID    MODEL REVISED: 12-02-2019
           37            ID
           38            ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 2 AND 3/4)
           39            ID
           40            ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
           41            ID        FOR DEVELOPMENT UNITS 2 AND 3/4.
           42            ID
           43            ID    MODEL REVISION DESCRIPTION:
           44            ID
           45            ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
           46            ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 1, DU 2, DU 3/4,
           47            ID        DU 5 NORTH,DU 6 NORTH, DU 6 SOUTH, AND DU 7 NAMING,BOUNDARIES, AND LAND
           48            ID        USES. RESIDENTIAL LOT COUNTS WITHIN DU 3/4 TO REFLECT APPROVED PLANS.
           49            ID        REVISED LAND USES WITHIN DU 1 AND 2.
           50            ID        THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
           51            ID        REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N
           52            ID        AND DU 7S.
           53            ID
           54            ID        MODEL REVISED BY:
           55            ID        WOOD, PATEL & ASSOCIATES, INC.
1                                                HEC-1 INPUT                                                    PAGE  2

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           57            ID
           58            ID        FILE PATH:
           59            ID        Z:\EASTMARK\2019\195036\PROJECT SUPPORT\REPORTS\DRAINAGE\
           60            ID        OVERALL EM MP UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT
           61            ID
           62            ID   ********************************************************************************
           63            ID
           64            ID    FILE: EMDU34.DAT
           65            ID
           66            ID    MODEL REVISED: 09-18-2017
           67            ID
           68            ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 3/4)
```

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   69          ID
   70          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
   71          ID        FOR DEVELOPMENT UNIT 3/4.
   72          ID
   73          ID    MODEL REVISION DESCRIPTION:
   74          ID
   75          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
   76          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 3/4, DU 5 NORTH,
   77          ID        DU 6 NORTH, AND DU 6 SOUTH NAMING, BOUNDARIES, AND LAND USES.
   78          ID        RESIDENTIAL LOT COUNTS WITHIN DU 6S TO REFLECT APPROVED PLANS.
   79          ID        REVISED LAND USES WITHIN DU 1 AND 2.
   80          ID        THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
   81          ID        REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, AND
   82          ID        DU 7S.
   83          ID
   84          ID        MODEL REVISED BY:
   85          ID        WOOD, PATEL & ASSOCIATES, INC.
   86          ID        STEVEN MCKEE, P.E.
   87          ID
   88          ID        FILE PATH:
   89          ID        Z:\EASTMARK\2017\174708\PROJECT SUPPORT\REPORTS\DRAINAGE\
   90          ID        OVERALL EM MP UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT
   91          ID
   92          ID   ********************************************************************************
   93          ID
   94          ID    FILE: EMDU56.DAT
   95          ID
   96          ID    MODEL REVISED: 04-04-2017
   97          ID
   98          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 5,DU 5N, AND DU 6S)
   99          ID
  100          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
  101          ID        FOR DEVELOPMENT UNITS 5, 5N, AND 6S (DU 5, DU 5N, AND DU 6S).
  102          ID
  103          ID    MODEL REVISION DESCRIPTION:
  104          ID
  105          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  106          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 5 NORTH, DU 5,
  107          ID        AND DU 6 SOUTH NAMING, BOUNDARIES, AND LAND USES. REPLACED THE
  108          ID        UNIVERSITY LAND USE FROM DU 3/4 WITH OFFICE AND RESIDENTIAL UNITS.
  109          ID        REVISED LAND USE IN PARCEL 7-24 FROM CHURCH TO EDUCATION. REVISED
  110          ID        RESIDENTIAL LOT COUNTS WITHIN DU 3 SOUTH,DU 6S, AND DU 8 TO REFLECT
1                                        HEC-1 INPUT                                    PAGE  3

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

  111          ID        APPROVED PLANS. REVISED LAND USES FOR OFFSITE SUBBASIN 77C TO REFLECT
  112          ID        MOUNTAIN HORIZONS SOUTH CONSTRUCTION. REVISED SUBBASIN BOUNDARIES
  113          ID        BASED ON A REVISED MASS GRADING PLAN AND ADDITIONAL DIRECTION PROVIDED
  114          ID        BY DMB. THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
  115          ID        REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N, AND
  116          ID        DU 7S. SUBBASIN 11 HAS BEEN DIVIDED INTO WATERSHEDS 11A AND 11B.
  117          ID        OUTFALLS FOR SUBBASINS 5A, 5B, 6A, 6B WERE DETERMINED BASED ON DIRECTION
  118          ID        FROM DMB AND DESIGN CONSULTANTS OF DU 5 AND DU 6S. THE OFFSITE RETENTION
  119          ID        FOR SUBBASINS 73B, 73C, 74B, 74C, 77B, 77C, AND 78C WERE UPDATED TO MORE
  120          ID        CLOSELY REFLECT DEVELOPMENT WITHIN THESE WATERSHEDS.
  121          ID
  122          ID        MODEL REVISED BY:
  123          ID        WOOD, PATEL & ASSOCIATES, INC.
  124          ID        STEVEN MCKEE, P.E.
  125          ID
  126          ID        FILE PATH:
  127          ID        R:\MESA PROVING GROUNDS\2016\164528\PROJECT SUPPORT\REPORTS\DRAINAGE\
  128          ID        OVERALL EASTMARK MP UPDATE\HYDROLOGY\PROPOSED\EMDU5E.DAT
  129          ID
  130          ID   ********************************************************************************
  131          ID
  132          ID    FILE: EMDU5E.DAT
  133          ID
  134          ID    MODEL REVISED: 04-18-2014
  135          ID
  136          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DEVELOPMENT UNIT 5 EAST)
  137          ID
  138          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
  139          ID        FOR DEVELOPMENT UNIT 5 EAST (DU 5E).
  140          ID
  141          ID    MODEL REVISION DESCRIPTION:
  142          ID
  143          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  144          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 5E HAS
  145          ID        CHANGED FROM GOLF TO INDUSTRIAL.  AREAS THAT PREVIOUSLY DRAINED TO GOLF
  146          ID        WHERE 100-YEAR, 24-HOUR RETENTION WAS PROVIDED WILL NOW BE REQUIRED TO
  147          ID        SELF RETAIN RETENTION VOLUME FROM THEIR SITE FOR THE 100-YEAR, 24-HOUR
  148          ID        STORM PEAK FLOWS HAVE REMAINED THE SAME.  THE REMAINING PORTION OF LAND
  149          ID        THAT WAS ASSOCIATED WITH GOLF HAS BEEN REVISED TO RESIDENTIAL USE.
  150          ID
  151          ID        MODEL REVISED BY:
  152          ID        WOOD, PATEL & ASSOCIATES, INC.
  153          ID        DANIEL MATTHEWS, P.E.
  154          ID
  155          ID        FILE PATH:
  156          ID        R:\MESA PROVING GROUNDS\2014\144173\PROJECT SUPPORT\REPORTS\DRAINAGE\
  157          ID        EASTMARK OVERALL MASTER DRAINAGE UPDATE\HYDROLOGY\PROPOSED\EMDU5E.DAT
  158          ID
  159          ID   ********************************************************************************
  160          ID
  161          ID    FILE: EMDU34.DAT
  162          ID
  163          ID    MODEL REVISED: 04-14-2014
  164          ID
  165          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3/4
1                                        HEC-1 INPUT                                    PAGE  4

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

  166          ID
  167          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
  168          ID        FOR DEVELOPMENT UNIT 3/4 (DU 3/4).
  169          ID
  170          ID    MODEL REVISION DESCRIPTION:
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  171          ID
  172          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  173          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 3/4 HAS BEEN
  174          ID        REVISED TO REFLECT MORE DETAILED PLANNING.  MINOR ADJUSTMENTS TO LAND
  175          ID        USES OUTSIDE OF DU 3/4 HAVE BEEN MADE.  ADDITIONALLY WATERSHED
  176          ID        BOUNDARIES HAVE BEEN REVISED TO REFLECT A CONCEPTUAL MASS GRADE PLAN
  177          ID        PROVIDED TO WOOD/PATEL BY A CONSULTANT OF THE DEVELOPER DMB MESA
  178          ID        PROVING GROUNDS LLC.
  179          ID
  180          ID        MODEL REVISED BY:
  181          ID        WOOD, PATEL & ASSOCIATES, INC.
  182          ID        DANIEL MATTHEWS, P.E.
  183          ID
  184          ID        FILE PATH:
  185          ID        R:\MESA PROVING GROUNDS\2011\113697.09\PROJECT SUPPORT\REPORTS\
  186          ID        EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT
  187          ID
  188          ID   ************************************************************************
  189          ID    FILE: EMDU3S.DAT
  190          ID
  191          ID    MODEL REVISED: 12-11-2013
  192          ID
  193          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3 SOUTH
  194          ID
  195          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
  196          ID        FOR DEVELOPMENT UNIT 3 SOUTH (DU-3S).
  197          ID
  198          ID    MODEL REVISION DESCRIPTION:
  199          ID
  200          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  201          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USES FOR DU-3S ARE
  202          ID        CONSISTENT WITH THE PREVIOUS MODEL (EMDU89.DAT) THEREFORE RESULTING
  203          ID        PEAK FLOWS HAVE REMAINED THE SAME.
  204          ID
  205          ID        MODEL REVISED BY:
  206          ID        WOOD, PATEL & ASSOCIATES, INC.
  207          ID        DANIEL MATTHEWS, P.E.
  208          ID
  209          ID        FILE PATH:
  210          ID        R:\MESA PROVING GROUNDS\2011\113697.08\PROJECT SUPPORT\REPORTS\
  211          ID        EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU3S.DAT
  212          ID
  213          ID   ************************************************************************
  214          ID
  215          ID    FILE: EMDU89.DAT
  216          ID
  217          ID    MODEL REVISED: 1-22-2013
  218          ID
  219          ID    PROJECT: EASTMARK 646
  220          ID
1                                      HEC-1 INPUT                                    PAGE  5

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

  221          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING
  222          ID        FOR DEVELOPMENT UNITS 8&9 (DU 8&9).
  223          ID
  224          ID    MODEL REVISION DESCRIPTION:
  225          ID
  226          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  227          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS WERE
  228          ID        UPDATED TO REFLECT CURRENT PLAN FOR DEVELOPMENT UNITS 8 & 9.
  229          ID
  230          ID        MODEL REVISED BY:
  231          ID        WOOD, PATEL & ASSOCIATES, INC.
  232          ID        DARREN E. SMITH, P.E.
  233          ID
  234          ID        FILE PATH:
  235          ID        R:\MESA PROVING GROUNDS\2012\123835\PROJECT SUPPORT\REPORTS\
  236          ID        DRAINAGE\HYDROLOGY\PROPOSED\EMDU89.DAT
  237          ID
  238          ID   ************************************************************************
  239          ID
  240          ID        FILE: MPGDU7.DAT
  241          ID
  242          ID        MODEL REVISED: 09-07-2011
  243          ID
  244          ID        PROJECT: MESA PROVING GROUNDS
  245          ID
  246          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  247          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  248          ID
  249          ID        THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING
  250          ID        FOR DEVELOPMENT UNIT 7 (DU7)PROVIDED BY ARIZONA LAND DESIGN ON 09/02/201
  251          ID        09/02/2011.
  252          ID
  253          ID        MODEL REVISION DESCRIPTION:
  254          ID
  255          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  256          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS WERE
  257          ID        UPDATED TO REFLECT A GRADING PLAN PROVIDED BY LD TEAM ON 8/30/2011.
  258          ID        MODELING OF THE POWERLINE FLOODWAY HAS BEEN UPDATED TO REFLECT THE
  259          ID        EXISTING SECTIONS AND SLOPE PER AS-BUILT DRAWINGS ACROSS THE MPG
  260          ID        SITE.
  261          ID
  262          ID        MODEL REVISED BY:
  263          ID        WOOD, PATEL & ASSOCIATES, INC.
  264          ID        DANIEL W. MATTHEWS, E.I.T.
  265          ID
  266          ID        FILE PATH:
  267          ID        R:\MESA PROVING GROUNDS\2011\113697\PROJECT SUPPORT\REPORTS\
  268          ID        DRAINAGE\HYDROLOGY\MPGDU7.DAT
  269          ID
  270          ID
  271          ID   ************************************************************************
  272          ID
  273          ID        FILE: MPG20RT2.DAT
  274          ID
  275          ID        MODEL REVISED: 04-25-2011
1                                      HEC-1 INPUT                                    PAGE  6
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  276         ID
  277         ID        PROJECT: MESA PROVING GROUNDS
  278         ID
  279         ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  280         ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  281         ID
  282         ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  283         ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
  284         ID        BY SWABACK PARTNERS ON 12/12/07.
  285         ID
  286         ID        MODEL REVISION DESCRIPTION:
  287         ID
  288         ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  289         ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS 01 AND
  290         ID        20 WERE UPDATED TO REFLECT THE INCORPORATION OF THE FIRST SOLAR SITE
  291         ID        IN THE NORTHEAST CORNER OF DU-6.  WATERSHED 02 WAS SPLIT INTO 02A AND
  292         ID        02B.  LAND USE WAS CHANGED TO INDUSTRIAL FOR 02B AND ENTIRELEY
  293         ID        RESIDENTIAL FOR 02A.
  294         ID        THE FIRST SOLAR SITE RUNOFF WILL NOW BE RETAINED ENTIRELY ONSITE.
  295         ID
  296         ID        MODEL REVISED BY:
  297         ID        WOOD, PATEL & ASSOCIATES, INC.
  298         ID        STEPHEN M. SCINTO, P.E.
  299         ID
  300         ID        FILE PATH:
  301         ID        R:\MESA PROVING GROUNDS\2010\103564.04\PROJECT SUPPORT\REPORTS\
  302         ID        DRAINAGE\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL\
  303         ID        MPG20RT2.DAT
  304         ID
  305         ID   **************************************************************************
  306         ID
  307         ID        FILE: MPG20RT2.DAT
  308         ID
  309         ID        MODEL REVISED: 09-16-08
  310         ID
  311         ID        PROJECT: MESA PROVING GROUNDS
  312         ID
  313         ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  314         ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  315         ID
  316         ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  317         ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
  318         ID        BY SWABACK PARTNERS ON 12/12/07.
  319         ID
  320         ID        MODEL REVISION DESCRIPTION:
  321         ID
  322         ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  323         ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS 01, 02,
  324         ID        03, AND 06 WERE UPDATED TO REFLECT THE CURRENT GOLF COURSE
  325         ID        CONFIGURATION.
  326         ID
  327         ID        MODEL REVISED BY:
  328         ID        WOOD, PATEL & ASSOCIATES, INC.
  329         ID        DANIEL W. MATTHEWS, E.I.T.
  330         ID
1                                        HEC-1 INPUT                                        PAGE  7

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

  331         ID        FILE PATH:
  332         ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
  333         ID        PLAN\2ND SUBMITTAL(COM)\HYDROLOGY\MPG20RT2.DAT
  334         ID
  335         ID   **************************************************************************
  336         ID
  337         ID        FILE: MPG20RT2.DAT
  338         ID
  339         ID        MODEL REVISED: 05-15-08
  340         ID
  341         ID        PROJECT: MESA PROVING GROUNDS
  342         ID
  343         ID        MODEL REVISION DESCRIPTION:
  344         ID
  345         ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  346         ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  347         ID
  348         ID
  349         ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  350         ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
  351         ID        BY SWABACK PARTNERS ON 12/12/07.
  352         ID
  353         ID
  354         ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  355         ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  WATERSHED 79A WAS UPDATED
  356         ID        AS REQUESTED BY FLOOD CONTROL DISTRICT OF MARICOPA COUNTY TO REDUCE THE
  357         ID        PERCENT IMPERVIOUS VALUE FROM 80% TO 0% TO MATCH THE LAND USE AS MODELED
  358         ID        WITHIN THE EAST MESA ADMP.
  359         ID
  360         ID        MODEL REVISED BY:
  361         ID        WOOD, PATEL & ASSOCIATES, INC.
  362         ID        DANIEL W. MATTHEWS, E.I.T.
  363         ID
  364         ID        FILE PATH:
  365         ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
  366         ID        PLAN\2ND SUBMITTAL\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
  367         ID        MPG20RT2.DAT
  368         ID
  369         ID   **************************************************************************
  370         ID
  371         ID        FILE: MPG20RT2.DAT
  372         ID
  373         ID        MODEL REVISED: 01-08-08
  374         ID
  375         ID        PROJECT: MESA PROVING GROUNDS
  376         ID
  377         ID        MODEL REVISION DESCRIPTION:
  378         ID
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 379          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
 380          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
 381          ID
 382          ID
 383          ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
 384          ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
 385          ID        BY SWABACK PARTNERS ON 12/12/07.
1                                    HEC-1 INPUT                                        PAGE  8

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

 386          ID
 387          ID
 388          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
 389          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  WATERSHEDS 68A, 68B,
 390          ID        70A, 70B, 71, 73B, 73C, 74B, 74C, 75, 77B, 77C, 78B, 78C, AND 79A
 391          ID        HAVE ALL BEEN UPDATED TO REFLECT CURRENT WATERSHED DELINEATIONS,
 392          ID        NEW DEVELOPMENT, CURRENT RETENTION,AND FLOOD ROUTING.  BASIN 75
 393          ID        HAS BEEN UPDATED TO REFLECT PLANNED DEVELOPEMENT FOR THE MESA
 394          ID        PROVING GROUNDS SITE.
 395          ID
 396          ID        MODEL REVISED BY:
 397          ID        WOOD, PATEL & ASSOCIATES, INC.
 398          ID        DANIEL W. MATTHEWS, E.I.T.
 399          ID
 400          ID        FILE PATH:
 401          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
 402          ID        PLAN\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
 403          ID        MPG20RT2.DAT
 404          ID
 405          ID   ***************************************************************************
 406          ID
 407          ID
 408          ID    ID  Kirkham Michael:
 409          ID    Last Revised Date:  1/22/03
 410          ID    Filename:  WS4-SEM.DAT
 411          ID
 412          ID    Comments Dated 1/22/03 (CJ)
 413          ID
 414          ID    This model should be used ONLY for the Rittenhouse and Chandler Heights
 415          ID    Basin Design Project - Final Design Analyses.
 416          ID
 417          ID    This model is one of several models that represent the EMF watershed.
 418          ID    This model covers the Southeast Mesa Area and should reference as a DSS
 419          ID    the watershed model for the Northeast Mesa Area (Filename WS2-NEM.DAT).
 420          ID
 421          ID    This model is necessary to determine the input hydrographs for the
 422          ID    Rittenhouse Basin Design HEC-RAS Unsteady State analysis.  To develop
 423          ID    the necessary input hydrographs the following models should be run in order.
 424          ID    Because the files utilize a TAPE21 file to export import hydrographs
 425          ID    between models, prior to running the FIRST model (WS1-NWM.DAT) any existing
 426          ID    TAPE21 file in the directory should be deleted.  The run procedure order is:
 427          ID
 428          ID         1)  WS1-NWM.DAT
 429          ID         2)  WS2-NEM.DAT
 430          ID         3)  WS3-QCSW.DAT
 431          ID         4)  WS4-SEM.DAT (referencing WS2-NEM.DSS for the DSS file)
 432          ID         5)  RT1-BASE.DAT
 433          ID
 434          ID    The necessary input hydrographs for the Rittenhouse Basin analysis
 435          ID    are determined in RT1-BASE.  In that output file, the hydrograph at
 436          ID    RWFLD1 should be exported and used as the input hydrograph at the
 437          ID    EMF Reach 4 Cross Section 17.082.  And the hydrograph at RITTEN should
 438          ID    be exported and used as the input hydrograph for the Rittenhouse Main
 439          ID    Channel at Cross Section 820.00
 440          ID
1                                    HEC-1 INPUT                                        PAGE  9

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

 441          ID
 442          ID    ***************************************************************************
 443          ID    **** NOTE BY PRIMATECH ENGINEERS:                                      ****
 444          ID    **** DATE: 06/12/2001                                                  ****
 445          ID    **** THE NEW FILE NAME IS: SEBTALT2.DAT                                ****
 446          ID    **** THE FILE WAS RENAMED AS <<RTBTALT2.DAT>> FOR THE EAST MARICOPA    ****
 447          ID    **** FLOODWAY CAPACITY MITIGATION PROJECT, BY FLOOD CONTROL DISTRICT OF ****
 448          ID    **** MARICOPA COUNTY.                                                  ****
 449          ID    **** THE FILE WAS RENAMED <<RTBTALT3.DAT>> AND UPDATED USING GREEN AND  ****
 450          ID    **** AMPT FUTURE CONDITIONS FOR BASINS 258 TO 268.                     ****
 451          ID    ***************************************************************************
 452          ID
 453          ID
 454          ID
 455          ID     THIS MODEL WAS ORIGINALLY MIDDOUT.DAT
 456          ID     IT HAS BEEN MODIFIED BY CPE (7/2000)
 457          ID     FOR ALTERNATIVE 2 FOR THE EAST MARICOPA FLOOWAY
 458          ID     CAPACITY MITIGATION AND MULTI-USE CORRIDOR STUDY
 459          ID     TO ROUTE BOTH THE POWERLINE FLOOWAY
 460          ID     AND THE SANTAN FREEWAY CHANNEL INTO THE RAY BASIN PRIOR THEIR OUTFALL
 461          ID     INTO THE EMF
 462          ID
 463          ID    ***************************************************************
 464          ID
 465          ID          Model files changed by Collins/Pina Engineering
 466          ID          to reflect multi-use design concepts (recreation
 467          ID          and environment) proposed throughout the entire
 468          ID          EMF Corridor.    July 2000
 469          ID
 470          ID
 471          ID     VERSION 8.06  CPE 7/31/00
 472          ID
 473          ID  ***************************************************************************
 474          ID
 475          ID
 476          ID  ***************************************************************************
 477          ID   FILENAME: MIDDOUT.DAT
 478          ID
 479          ID   ALL CIP INFRASTRUCTURE IS IN PLACE, FUTURE CONDITIONS LANDUSE IS IN PLACE
 480          ID   FLOW IS ROUTED UP ELLSWORTH ROAD IN A EARTH LINED CHANNEL
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          481          ID
          482          ID  **************************************************************************
          483          ID   PRODUCED BY DIBBLE AND ASSOCIATES AND HOSKIN ENGINEERING CONSULTANTS.
          484          ID   File Name: Final8.Dat
          485          ID   Revised - Jan. 2000 by SZ (Wood/Patel) From Final7.dat - new Z-V & Sideweir
          486          ID   Revised - Jan. 2000 by SZ (Wood/Patel) from Final6.dat - 60% review comments
          487          ID   Revised - Dec. 1999 by SZ (Wood/Patel) from Final5.dat
          488          ID   Revised - Dec. 1999 by SZ (Wood/Patel) from Final4.dat
          489          ID   Revised - Nov. 1999 by SZ (Wood/Patel) from Final3.dat
          490          ID   Revised - June 1999 by SZ (Wood/Patel) for Final Model from Opt1.dat.
          491          ID   Revised - May 1999 by SZ (Wood/Patel) for Option 1, Based on Model SDIB.DAT
          492          ID   REVISED - MAY, 1999 BY VAS TO INCORPORATE INCREASE OF SUBBASIN RETENTION AND
          493          ID            REVISIONS TO THE REGIONAL DETENTION BASIN STORAGE
          494          ID   REVISED - FEB, 1999 BY VALERIE SWICK, FCD OF MARICOPA COUNTY
          495          ID   REVISED - MAY, 1998 BY D&A
1                                        HEC-1 INPUT                                          PAGE 10

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

          496          ID
          497          ID   REVISED BY VALERIE SWICK, FEB. 26, 1998
          498          ID
          499          ID   FLOWS FROM DETENTION BASIN LOCATED AT NE CORNER OF ELLIOT AND ELLSWORTH ROADS
          500          ID   IS ROUTED TO THE SOUTHWEST BY SIPHON DRAW TO SUBBASIN 70A. FROM THERE THEY
          501          ID   WILL BE ROUTED BY A CHANNEL TO THE EMF. FLOWS FROM SUBBASINS ADJACENT TO
          502          ID   SANTAN FREEWAY ALIGNMENT WILL BE ROUTED SOUTH TO SUBBASIN 70A WHERE THEY WILL
          503          ID   BE COMBINED WITH FLOW IN SIPHON DRAW.
          504          ID
          505          ID   EAST MESA AREA DRAINAGE MASTER PLAN
          506          ID   AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
          507          ID   AUGUST 1997
          508          ID   SOUTHEAST MESA HIGH RESOLUTION MODEL
          509          ID
          510          ID   **********FUTURE CONDITION MODEL OF THE WATERSHED************************
          511          ID
          512          ID  ***********ATTENTION************************************************************
          513          ID    SUBBASINS 75, 79A, 79B, 78E,  LANDUSES WERE NOT
          514          ID    CHANGED BECAUSE IT WAS FELT THAT THEIR FUTURE CONDITIONS LANDUSES WOULD BE
          515          ID    SIMILAR TO THE EXISTING CONDITIONS LANDUSES.
          516          ID    RETENTION VOLUMES WILL ALSO NOT BE UTILIZED FOR SUBBASINS 75, 79A, 79B, 78E
          517          ID    SOME QUEEN CREEK SUBBASINS WILL ALSO NOT HAVE RETENTION VOLUMES, EITHER
          518          ID    BECAUSE THEY LIE IN PINAL COUNTY AND WE DONT KNOW PINAL COUNTIES PLANS OR
          519          ID    THEY LIE IN THE SANTAN MOUNTAINS AND WON'T GET DEVELOPED
          520          ID    WILLIAMS GATEWAY AIRPORT (SUBBASINS 80A, 80B, 81A, AND 81B) ARE MODELED AS
          521          ID    FUTURE CONDITIONS AND HAVE RETENTION VOLUMES FOR THE 100YR 2HR STORM
          522          ID  **************************************************************************
          523          ID   FILENAME:  SDIBB.DAT
          524          ID
          525          ID   THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
          526          ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 213 SQ. MI.
          527          ID   THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
          528          ID   CONDITIONS.
          529          ID
          530          ID   100-YEAR 24-HOUR FREQUENCY
          531          ID   AREAL REDUCTIONS FROM FCD HYDROLOGY MANUAL
          532          ID   THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
          533          ID   AND EAST OF THE CAP
          534          ID
          535          ID   DATA FROM THE QUEEN CREEK ADMS HAS BEEN ADDED TO CALCULATE FLOWS INTO THE
          536          ID   EMF.   MUSKINGUM ROUTING NSTEPS WERE ADJUSTED TO BE WITHIN THE SUGGESTED
          537          ID   RANGE.
          538          ID
          539          ID   METHODOLOGY
          540          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
          541          ID   SCS TYPE II RAINFALL DISTRIBUTION
          542          ID   S-GRAPH HYDROGRAPH
          543          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
          544          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
          545          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
          546          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
          547          ID   DATED 1994
          548          ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
          549          ID
          550          ID   ORIGINAL STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
1                                        HEC-1 INPUT                                          PAGE 11

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

          551          ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
          552          ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
          553          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
          554          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
          555          ID
          556          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
          557          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
          558          ID
          559          ID   VELOCITIES FOR ADMP IMPROVEMENT CHANNELS FROM DIBBLE AND ASSOCIATES
          560          ID   SUGGESTED ALTERNATIVES (JULY 1, 1997)
          561          ID
          562          ID   ****************************************************************************
          563          ID   **** THE FOLLOWING NOTE WAS ADDED BY PRIMATECH ENGINEERS ON 06-12-2001 ****
          564          ID   ****************************************************************************
          565          ID   NOTE: MUST USE NEBUILD.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
          566          ID         SUPERSTITION FREEWAY.
          567          ID   ****************************************************************************
          568          ID
          569          ID
          570          ID   NOTE: MUST USE NDIBF.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
          571          ID         SUPERSTITION FREEWAY.
          572          ID
          573          ID   DDM MCUHP2 SE MESA ADMP - SOUTH OF SUPERSTITION FWY, FUTURE CONDITIONS
                       *DIAGRAM
          574          IT       5  1APR97    0000     600
          575          IO       5
          576          IN      15
          577          JD    3.60    0.01
          578          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
          579          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
          580          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
          581          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
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 582          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 583          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 584          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 585          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 586          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 587          PC    .983    .986    .989    .992    .995    .998   1.000
 588          JD    3.58     1.0
 589          JD    3.49     5.0
 590          JD    3.38    10.0
 591          JD    3.24    30.0
 592          JD    3.10    60.0
 593          JD    3.05    90.0
 594          JD    3.00   120.0
 595          JD    2.97   150.0
              * **************************************************************************
              *

 596          KK    SOSS
 597          KM   INFL0W FROM SOSSAMAN BASIN VIA SOSSAMAN CHANNEL
 598          KM   QI CARDS ARE BASED ON THE PEAK OF 1800CFS TO SOSSAMAN CHANNEL
 599          BA   12.50
 600          ZR  =QI A=SOSSAMAN DRAIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              *
1                                      HEC-1 INPUT                                      PAGE 12

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


 601          KK   RSOSS
 602          KM   ROUTE FLOWS VIA SOSSAMAN CHANNEL TO BASELINE ROAD
 603          RS      1    FLOW      -1
 604          RC    .030    .025    .030    3500    .005
 605          RX       0       5      10      35      75     110     115     120
 606          RY      10      10      10       4       4      10      10      10
              *
              *

 607          KK     59A
 608          KM   BASIN 59A
 609          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 610          KM    L=       .9  Lca=       .3   S=   34.9  Kn= .070  LAG=  29.7
 611          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 612          BA     .26
 613          LG     .23     .25    4.55     .42   33.00
 614          UI     30.     77.    144.    186.    246.    364.    293.    226.    172.    123.
 615          UI     64.     48.     30.     15.      9.      9.      9.      0.      0.      0.
 616          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

 617          KK    R59A
 618          KM   RETAIN THE 100 YEAR 2 HOUR RUNOFF VOLUME
 619          DT    D59A       2
 620          DI       0   10000
 621          DQ       0   10000
              *
              *

 622          KK    C59A
 623          KM    SOSSAMAN DRAIN AT BASELINE ROAD
 624          HC       2
              *
              *

 625          KK  59A59B
 626          KM   ROUTE S59A TO 59B VIA SOSSAMAN CHANNEL
 627          KM   BLOCK WALL ON LEFT BANK, SOSSAMAN ROAD ON RIGHT BANK
 628          RS       2    FLOW      -1
 629          RC    .025    .018    .013    6500   .0015
 630          RX       0       3      13      38      78     103     128     203
 631          RY      16      10      10       0       0      10       8      10
              *
              *

 632          KK     59B
 633          KM   BASIN 59B
 634          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 635          KM    L=      1.2  Lca=       .7   S=   33.9  Kn= .087  LAG=  58.3
 636          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 637          BA     .94
 638          LG     .22     .24    4.65     .41   24.00
 639          UI     54.     54.     93.    193.    244.    284.    318.    361.    415.    501.
1                                      HEC-1 INPUT                                      PAGE 13

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

 640          UI    653.    666.    546.    473.    422.    364.    319.    273.    233.    172.
 641          UI    110.     94.     89.     68.     54.     54.     19.     17.     17.     17.
 642          UI     17.     17.     17.     17.      0.      0.      0.      0.      0.      0.
 643          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

 644          KK    R59B
 645          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 646          DT    D59B      63
 647          DI       0   10000
 648          DQ       0   10000
              *
              *

 649          KK    C59B
 650          KM   SOSSAMAN CHANNEL AT GUADALUPE ROAD
 651          HC       2
              *
              *

 652          KK  59BT60
 653          KM     ROUTE 59B TO 60 GUADALUPE CHANNEL.
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654          RS       6    FLOW      -1
655          RC     .02    .013     .02    5500   .0005
656          RX       0     518     522     522     560     560     580    2580
657          RY     8.5     8.5     8.5       0       0       8       7       6
             *
             *

658          KK      60
659          KM   BASIN 60
660          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
661          KM    L=      2.4  Lca=      1.4   S=   31.8  Kn= .087  LAG= 102.0
662          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
663          BA    2.30
664          LG     .18     .24    4.65     .43   35.00
665          UI     76.     76.     76.     76.    130.    250.    286.    330.    364.    395.
666          UI    422.    452.    484.    522.    571.    607.    689.    820.    915.   1008.
667          UI    885.    793.    723.    669.    626.    591.    536.    496.    459.    424.
668          UI    387.    362.    324.    276.    219.    169.    134.    134.    126.    125.
669          UI    121.     76.     76.     76.     76.     56.     23.     23.     23.     23.
670          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
671          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
672          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

673          KK     R60
674          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
675          DT     D60     170
676          DI       0   10000
677          DQ       0   10000
             *
             *
1                                        HEC-1 INPUT                                                PAGE 14

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

678          KK  EMFGUA
679          KM     COMBINE S59 AND S60 AT EMF, GUADALUPE ROAD
680          KO                                      21
681          HC       2
             *
             *

682          KK  GUATEL
683          KM   ROUTE EMF FLOW FROM GUADALUPE ROAD TO ELLIOT ROAD
684          RS       3    FLOW      -1
685          RC     .03    .022     .03    6000   .0003
686          RX       0     500     520     553     693     726     740     742
687          RY      14      12      11       0       0      11      11      12
             *
             *

688          KK      64
689          KM   BASIN 64
690          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
691          KM    L=      1.2  Lca=       .6   S=   25.4  Kn= .051  LAG=  34.4
692          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
693          BA     .81
694          LG     .18     .25    4.70     .41   54.00
695          UI     79.    155.    338.    438.    543.    709.    988.    778.    624.    493.
696          UI    388.    253.    139.    120.     79.     45.     24.     24.     24.     24.
697          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
698          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

699          KK     R64
700          KM   R64 IS WHAT REMAINS AFTER THE DIVERSION OF FLOW UP TO 67 AC-FT. THIS IS SENT
701          KM   TO TAPE 21 FOR RECALL INTO FCD'S EMF MODELS.  KK BLOCK THERE MUST BE UPDATED
702          KM   TO REFLECT THE CHANGE OF WHAT GETS SENT TO THE TAPE 21.
703          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
704          KO                                      21
705          DT     D64      67
706          DI       0   10000
707          DQ       0   10000
             *
             *

708          KK  EMFELL
709          KM     COMBINE EMF FLOW WITH FLOW FROM SUBBASIN 64 AT ELLIOT ROAD
710          HC       2
             *
             *

711          KK  ELTWAR
712          KM   ROUTE EMF FLOW AT ELLIOT ROAD TO WARNER ROAD VIA THE EMF
713          RS       4    FLOW      -1
714          RC     .03    .022     .03    5500   .0003
715          RX       0     500     520     553     693     726     740     742
716          RY      14      12      11       0       0      11      11      12
             *
             *
1                                        HEC-1 INPUT                                                PAGE 15

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

717          KK     62A
718          KM   BASIN 62A
719          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
720          KM    L=       .8  Lca=       .5   S=   30.0  Kn= .020  LAG=  10.2
721          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
722          BA     .38
723          LG     .10     .25    4.50     .52   80.00
724          UI    335.   1057.   1010.    367.     93.     38.      0.      0.      0.      0.
725          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *
```

```
          726          KK    R62A
          727          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          728          DT    D62A      33
          729          DI       0   10000
          730          DQ       0   10000
                       *
                       *

          731          KK   62ATB
          732          KM   ROUTE 62A TO 62B BY A CHANNEL ALONG BASELINE ROAD THROUGH SANTAN FWY
          733          RS       1    FLOW      -1
          734          RC    .030    .030    .030    1200    .002
          735          RX       0     200     250     275     295     320     370     570
          736          RY      10       8       7       0       0       7       8      10
                       *
                       *

          737          KK     62B
          738          KM   BASIN 62B
          739          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          740          KM    L=       .6  Lca=       .3   S=   47.5  Kn= .021  LAG=   8.0
          741          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          742          BA     .23
          743          LG     .11     .25    4.65     .46   78.00
          744          UI    334.    940.    431.     83.      0.      0.      0.      0.      0.      0.
          745          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                       *
                       *

          746          KK    R62B
          747          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          748          DT    D62B      19
          749          DI       0   10000
          750          DQ       0   10000
                       *
                       *
1                                                HEC-1 INPUT                                                PAGE 16

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

          751          KK    C62B
          752          KM   COMBINE FLOW FROM BASIN 62A AND 62B
          753          HC       2
                       *
                       *

          754          KK   62BTD
          755          KM   ROUTE 62B TO 62D VIA HAWES ROAD
          756          RS       5    FLOW      -1
          757          RC    .045     .04    .045    5280   .0041
          758          RX       0     100     125     127     177     179     224     324
          759          RY       3       2    1.50       0       0     1.5       2       3
                       *
                       *

          760          KK     62D
          761          KM   BASIN 62D
          762          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          763          KM    L=       .9  Lca=       .3   S=   30.7  Kn= .045  LAG=  21.3
          764          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
          765          BA     .46
          766          LG     .23     .25    4.65     .40   50.00
          767          UI     76.    300.    519.    753.    475.    369.    286.    203.    163.    111.
          768          UI     85.     63.     47.     36.     26.     14.     14.     14.     14.      0.
          769          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
          770          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                       *
                       *

          771          KK    R62D
          772          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          773          DT    D62D      35
          774          DI       0   10000
          775          DQ       0   10000
                       *
                       *

          776          KK   CP62D
          777          KM   COMBINE FLOWS FROM SUBBASINS 62B AND 62D
          778          HC       2
                       *
                       *

          779          KK   62DTF
          780          KM   ROUTE 62D TO 62F VIA HAWES ROAD
          781          RS       9    FLOW      -1
          782          RC    .045    .024    .045    3600   .0033
          783          RX       0     500     750     753     793     796    1046    1546
          784          RY       3     1.5    1.25       0       0    1.25     1.5       3
                       *
                       *
1                                                HEC-1 INPUT                                                PAGE 17

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

          785          KK     62F
          786          KM   BASIN 62F
          787          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          788          KM    L=       .6  Lca=       .4   S=   31.9  Kn= .042  LAG=  18.1
          789          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          790          BA     .26
          791          LG     .21     .25    4.65     .41   54.00
          792          UI     66.    224.    350.    546.    371.    235.     98.     56.     18.     15.
          793          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
          794          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                       *
                       *
```

```
 795          KK    R62F
 796          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 797          DT    D62F      18
 798          DI       0   10000
 799          DQ       0   10000
              *
              *

 800          KK   CP62F
 801          KM   COMBINE FLOWS FROM 62D AND 62F
 802          HC       2
              *
              *

 803          KK   62T63
 804          KM   ROUTE CP62F TO SUBBASIN 63 VIA WASH.
 805          KM   WASH CROSSES HAWES, NORTH OF ELLIOT
 806          RS       4    FLOW      -1
 807          RC    .045     .04    .045    6000  0.0055
 808          RX       0     500     750     770     780     800    1050    1550
 809          RY       5       4       3       0       0       3       4       5
              *
              *

 810          KK      63
 811          KM   BASIN 63
 812          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 813          KM    L=      1.4  Lca=       .7   S=   28.2  Kn= .035  LAG=  26.8
 814          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 815          BA     .91
 816          LG     .18     .25    4.65     .43   55.00
 817          UI    114.    346.    595.    780.   1159.   1291.    930.    689.    485.    241.
 818          UI    170.    113.     35.     35.     35.     35.      0.      0.      0.      0.
 819          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                        PAGE 18

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

 820          KK     R63
 821          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 822          DT     D63      71
 823          DI       0   10000
 824          DQ       0   10000
              *
              *

 825          KK    CP63
 826          KM   COMBINE FLOWS FROM SUBBASIN 63 AND CP62F
 827          HC       2
              *
              *

 828          KK   63T71
 829          KM   ROUTE CP63 TO S71 VIA SHEET FLOW
 830          KM   SOSSAMAN SOUTH OF ELLIOT
 831          RS      11    FLOW      -1
 832          RC    .055     .045    .055    5280   .0005
 833          RX       0    1000    1005    1010    1013    1043    1543    2043
 834          RY       6       5       0       0       3       5       2       5
              *
              *

 835          KK    68B1   BASIN
 836          KM   BASIN 68B1
 837          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 838          KM    L=0.75  Lca=0.38  S=32.3  Kn=0.030  LAG=13.9
 839          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 840          BA   0.146
 841          LG    0.10    0.25    5.20    0.36      80
 842          UI      68     206     374     269     135      48      17      11       0       0
 843          UI       0       0       0       0       0       0       0       0       0       0
              *

 844          KK    68B2   BASIN
 845          KM   BASIN 68B2
 846          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 847          KM    L=0.55  Lca=0.28  S=32.4  Kn=0.030  LAG=11.0
 848          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 849          BA   0.060
 850          LG    0.10    0.25    5.20    0.36      80
 851          UI      45     141     173      74      23       6       0       0       0       0
 852          UI       0       0       0       0       0       0       0       0       0       0
              *

 853          KK    68B3   BASIN
 854          KM   BASIN 68B3
 855          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 856          KM    L=0.36  Lca=0.18  S=32.2  Kn=0.030  LAG=7.9
 857          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 858          BA   0.036
 859          LG    0.10    0.25    5.20    0.36      80
 860          UI      52     148      63      12       0       0       0       0       0       0
1                                        HEC-1 INPUT                                        PAGE 19

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

 861          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 862          KK    CP68
 863          KM   COMBINE FLOWS FROM BASINS 68B1, 68B2, AND 68B3
 864          HC       3
              *
              *

 865          KK     R68
```

```
 866          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 867          DT    D68B      24
 868          DI       0   10000
 869          DQ       0   10000
              *
              *

 870          KK  68BT69
 871          KM   ROUTE S68B TO S69 VIA WASH CROSSING HAWES
 872          RS       4    FLOW      -1
 873          RC    .045     .04    .045    2750   .0036
 874          RX       0     500     950    1003    1007    1057    1511    2011
 875          RY       4     3.5       3       0       0       2     2.5       3
              *
              *

 876          KK      69
 877          KM   BASIN 69
 878          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 879          KM    L=       .7  Lca=       .3   S=   22.4  Kn= .020  LAG=   9.0
 880          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 881          BA     .09
 882          LG     .10     .25    4.70     .45   80.00
 883          UI    104.    320.    213.     54.     11.      0.      0.      0.      0.      0.
 884          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

 885          KK     R69
 886          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 887          DT     D69       9
 888          DI       0   10000
 889          DQ       0   10000
              *
              *

 890          KK     C69
 891          KM   COMBINE FLOWS FROM SUBBASIN 68B AND 69
 892          HC       2
              *
              *
1                                        HEC-1 INPUT                                                PAGE 20

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

 893          KK   69T71
 894          KM   ROUTE S69 TO S71 VIA WASH AND SHEET FLOW, INCREASE OVERBANK N VALUES
 895          RS      11    FLOW      -1
 896          RC    .055    .045    .055    6000   .0033
 897          RX       0     500    1000    1001    1002    1500    2000    2500
 898          RY       4       3       2       0       0       2       3       4
              *

 899          KK      25   BASIN
 900          KM   BASIN 25
 901          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 902          KM    L=0.90  Lca=0.41  S=16.7  Kn=0.035  LAG=20.2
 903          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 904          BA   0.208
 905          LG    0.10    0.25    5.00    0.39      80
 906          UI      40     151     225     371     334     221     139      60      37      11
 907          UI      11      10       0       0       0       0       0       0       0       0
 908          UI       0       0       0       0       0       0       0       0       0       0
 909          UI       0       0       0       0       0       0       0       0       0       0
 910          UI       0       0       0       0       0       0       0       0       0       0
              *

 911          KK   RET25  DIVERT
 912          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 913          DT   25RET    21.9     0.0
 914          DI     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
 915          DQ     0.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0     0.0
              *

 916          KK   25T71   ROUTE
 917          KM   ROUTE BASIN 25 TO BASIN 71 VIA WASH AND SHEET FLOW
 918          RS      11    FLOW      -1
 919          RC   0.045   0.040   0.045    5686  0.0050    0.00
 920          RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
 921          RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
              *

 922          KK      71
 923          KM   BASIN 71
 924          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 925          KM    L=      1.6  Lca=       .8   S=   26.4  Kn= .020  LAG=  16.8
 926          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 927          KM    BASIN AREA UPDATED FROM 1.09 TO 0.861 BECAUSE AREA FOR BASIN 25 WAS REMOVED
 928          KM    FROM BASIN 71
 929          BA   0.861
 930          LG     .10     .25    4.65     .47   80.00
 931          UI    331.   1085.   1805.   2349.   1459.    780.    329.    144.     67.     67.
 932          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 933          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                                PAGE 21

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

 934          KK     R71
 935          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 936          KM   RETENTION VOLUME WAS REDUCED FROM 106 AC-FT TO 84.1 AC-FT BECAUSE 21.9 AC-FT
 937          KM   WAS ACCOUNTED FOR IN RET25.
 938          KM
 939          DT     D71    84.1
 940          DI       0   10000
 941          DQ       0   10000
```

```
                *
                *

 942            KK     C71
 943            KM   COMBINE FLOWS FROM 63T71, 69T71, BASIN 71, AND BASIN 25
 944            KM   CONCENTRATION POINT IS ALONG SOSSAMAN AT THE MESQUITE ST ALIGNMENT
 945            HC       4
                *
                *

 946            KK   71T72
 947            KM   ROUTE C71 TO S72 VIA DIKE
 948            KM    WASH WEST OF INTERSECTION OF SOSSAMAN & WARNER
 949            RS       8    FLOW      -1
 950            RC    .055    .045    .055    3750   .0037
 951            RX       0     500    1000    1007    1017    1025    1530    2030
 952            RY       9     8.5       8       0       0       8     8.5       9
                *
                *

 953            KK      72
 954            KM   BASIN 72
 955            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 956            KM    L=      1.6  Lca=      .9   S=   13.1  Kn= .020  LAG=  20.3
 957            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 958            BA     .84
 959            LG     .10     .25    5.40     .33   80.00
 960            UI    161.    600.    906.   1496.   1347.    912.    566.    247.    153.     50.
 961            UI     43.     43.      0.      0.      0.      0.      0.      0.      0.      0.
 962            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

 963            KK     R72
 964            KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 965            DT     D72      83
 966            DI       0   10000
 967            DQ       0   10000
                *
                * CONCENTRATION POINT ADDED PRIOR TO EMF COMBINE SO THAT FLOWS CAN BE SENT TO
                * TAPE21.
                *
1                                       HEC-1 INPUT                                             PAGE 22

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


 968            KK  CPKNOX
 969            KO                                   21
 970            HC       2
                *
                *

 971            KK  EMFWAR
 972            KM   COMBINE ROUTED FLOW FROM 71 WITH 72 WITH EMF (HYDROGRAPH ELTWAR)
 973            HC       2
                *
                *

 974            KK  WARTKN
 975            KM   ROUTE EMF WARNER ROAD FLOW TO KNOX ROAD
 976            RS       2    FLOW      -1
 977            RC     .03    .022     .03    2500   .0003
 978            RX       0     500     520     553     693     726     740     742
 979            RY      14      12      11       0       0      11      11      12
                *
                *

 980            KK      26   BASIN
 981            KM   BASIN 26
 982            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 983            KM    L=0.38  Lca=0.19  S=23.7  Kn=0.035  LAG=10.2
 984            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 985            BA   0.045
 986            LG    0.10    0.25    4.90    0.41      80
 987            UI      40     127     122      44      11       4       0       0       0       0
 988            UI       0       0       0       0       0       0       0       0       0       0
                *
                *

 989            KK   RET26  DIVERT
 990            KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 991            DT   26RET     4.8     0.0
 992            DI       0   10000
 993            DQ       0   10000
                *
                *

 994            KK  26T70B   ROUTE
 995            KM   ROUTE BASIN 26 TO BASIN 70B VIA WASH AND SHEET FLOW
 996            RS       6    FLOW      -1
 997            RC   0.045   0.040   0.045    4688  0.0057    0.00
 998            RX    0.00  500.00 1000.00 1003.00 1007.00 1011.00 1511.00 2011.00
 999            RY    3.00    2.50    2.00    0.00    0.00    2.00    2.50    3.00
                *
                *
1                                       HEC-1 INPUT                                             PAGE 23

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


1000            KK     70B
1001            KM   BASIN 70B
1002            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1003            KM    L=      1.6  Lca=      1.1   S=   29.9  Kn= .022  LAG=  20.7
1004            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1005            KM    BASIN AREA UPDATED FROM 0.38 TO 0.335 BECAUSE AREA FOR BASIN 26 WAS REMOVED
1006            KM    FROM BASIN 70B
1007            BA    .335
1008            LG     .11     .15    8.00     .12   76.00
```

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1009          UI     68.    259.    390.    636.    615.    418.    267.    119.     73.     30.
1010          UI     19.     19.      0.      0.      0.      0.      0.      0.      0.      0.
1011          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1012          KK    R70B
1013          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1014          KM   RETENTION VOLUME WAS REDUCED FROM 38 AC-FT TO 33.2 AC-FT BECAUSE 4.8 AC-FT
1015          KM   WAS ACCOUNTED FOR IN RET26.
1016          DT    D70B    33.2
1017          DI       0   10000
1018          DQ       0   10000
              *
              *

1019          KK   CP70B
1020          KM   COMBINE ROUTED FLOW FROM 26 AND 70B
1021          HC       2
              *
              *

1022          KK  70BT76
1023          KM   ROUTE 70B TO 76B VIA WASH CROSSING SOSSAMAN, SOUTH OF WARNER ROAD
1024          RS      11    FLOW      -1
1025          RC    .045     .04    .045    5500   .0041
1026          RX       0     500    1000    1003    1007    1011    1511    2011
1027          RY       4     3.5       3       0       0       2     2.5       3
              *

1028          KK     76B
1029          KM   BASIN 76B
1030          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1031          KM    L=      1.8  Lca=       .9   S=   27.4  Kn= .021  LAG=  18.9
1032          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1033          BA     .64
1034          LG     .10     .15    8.80     .09   78.00
1035          UI    148.    515.    789.   1294.    957.    629.    303.    157.     70.     35.
1036          UI     35.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1037          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
1                                        HEC-1 INPUT                                                PAGE 24

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


1038          KK    R76B
1039          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1040          DT    D76B      66
1041          DI       0   10000
1042          DQ       0   10000
              *

1043          KK    KNOX
1044          KM   COMBINE FLOWS AT KNOX ROAD
1045          KO                                    21
1046          HC       2
              *

1047          KK  EMFKNX
1048          KM   COMBINE FLOWS INTO THE EMF AT KNOX ROAD
1049          KM   THIS COMBINES HYDROGRAPHS WARTKN, 70BT76 and R76B.
1050          HC       2
              *
              *

1051          KK  KNXTRY
1052          KM   ROUTE EMF KNOX ROAD FLOW TO RAY ROAD
1053          RS       2    FLOW      -1
1054          RC     .03    .022     .03    3000   .0003
1055          RX       0     500     520     553     693     726     740     742
1056          RY      14      12      11       0       0      11      11      12
              *
              *

1057          KK     65A
1058          KM   BASIN 65A
1059          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1060          KM    L=      1.6  Lca=       .9   S=   51.2  Kn= .053  LAG=  41.5
1061          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1062          BA    2.54
1063          LG     .15     .25    5.10     .35   59.00
1064          UI    206.    248.    735.   1001.   1188.   1423.   1760.   2487.   2309.   1835.
1065          UI   1546.   1269.   1035.    777.    457.    351.    292.    206.    143.     63.
1066          UI     63.     63.     63.     63.      0.      0.      0.      0.      0.      0.
1067          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

1068          KK    R65A
1069          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1070          DT    D65A     174
1071          DI       0   10000
1072          DQ       0   10000
              *
              *
1                                        HEC-1 INPUT                                                PAGE 25

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


1073          KK   CAP1A
1074          KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
1075          KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
1076          KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS.
1077          BA     6.4
1078          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
                  *
                  *

1079              KK  RCAP1A
1080              KM   ROUTE FLOW FROM CAP OVERCHUTE TO A POINT ON THE MARICOPA/PINAL COUNTY LINE
1081              KM   2000 FEET NORTH OF THE GUADALUPE ROAD COUNTY LINE INTERSECTION. ROUTING WIL
1082              KM   BE BY A NATURAL CHANNEL.  THIS IS THEN ROUTED FOR 1200 FT
1083              KM   IN A CHANNEL (DIBBLE ID MN3) TO THE POINT WERE THE ROUTED CAP1B FLOW
1084              KM   INTERCEPTS THE CHANNEL. ORIGINAL SLOPE =.01
1085              RS       3    FLOW      -1
1086              RC    .045     .04    .045    4900    .010
1087              RX       0     500    1000    1006    1026    1032    1511    2011
1088              RY       4     3.5       3       0       0       3     3.5       4
                  *
                  *

1089              KK  RRCP1A
1090              KM   REACH MN-5 AND CULVERT MNC-1
1091              KM   ROUTE FLOW FROM WHERE RCAP1A FLOWS INTO THE NEW CHANNEL ALONG MERIDIAN ROAD
1092              KM   USES REVISED ROUTING PARAMETERS, CHANNEL MN-5 SHAPE
1093              RS       1    FLOW      -1
1094              RC   0.025   0.015   0.025    2350   .0017
1095              RX       0       8      16      27      43      53      61      69
1096              RY     5.1     5.2     5.3       0       0     5.3     5.2     5.1
                  *
                  *

1097              KK   CAP1B
1098              KM   INFLOW FROM EAST OF THE CAP THROUGH 2 - 72" PIPE OVERCHUTES
1099              KM   STATION #131+90 AND 158+00 SALT-GILA AQUEDUCT REACH 2
1100              KM   QI CARDS BASED ON PEAK OUTFLOW FROM OVERCHUTES OF 217 CFS.
1101              BA     6.4
1102              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
                  *
                  *
1                                          HEC-1 INPUT                                          PAGE 26

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

1103              KK  RCAP1B
1104              KM   ROUTE FLOW FROM CAP1B OVERCHUTE TO A POINT ALONG THE MARICOPA/PINAL COUNTY
1105              KM   LINE 1000 FEET NORTH OF THE INTERSECTION OF GUADALUPE ROAD AND THE COUNTY
1106              KM   LINE. ROUTING WILL BE BY A NATURAL CHANNEL. ORIGINAL SLOPE=.01
1107              RS       1    FLOW      -1
1108              RC    .045     .04    .045    4900    .010
1109              RX       0     500    1000    1006    1026    1032    1511    2011
1110              RY       4     3.5       3       0       0       3     3.5       4
                  *
                  *

1111              KK   C65A1
1112              KM   COMBINE FLOWS FROM SUBBASIN 65A(EAST OF MERIDIAN RD) AND CAP1A AND CAP1B
1113              HC       3
                  *
                  *

1114              KK  65ATB1
1115              KM   REACH MN-4, MN-3B AND MN-3A
1116              KM   ROUTE FLOW FROM BASIN 65A TO OFF-LINE DETENTION BASIN DIVERSION STRUCTURE
1117              KM   USES REVISED ROUTING PARAMETERS, CHANNEL MN-3A SHAPE.
1118              RS       1    FLOW      -1
1119              RC   0.025   0.015   0.025    3760   .0015
1120              RX     0.0     8.0    16.0      34      56      74      82      90
1121              RY     8.8     8.9     9.0       0       0     9.0     8.9     8.8
                  *
                  *

1122              KK  DIDB65
1123              KM   DETENTION BASIN DIVERSION STRUCTURE
1124              KM   DIVERT FLOW FROM CHANNEL TO OFF-LINE BASIN
                  * KO     2       2
1125              DT   DB65A
1126              DI       0     100     434     582     854    1206    1624    2096    3188
1127              DQ       0       0       0     148     420     772    1190    1662    2754
                  *
                  *

1128              KK  65B1T2
1129              KM   REACH MN-2
1130              KM   ROUTE FLOW FROM BASIN DIVERSION STRUCTURE TO BASIN OUTLET
1131              RS       1    FLOW      -1       0
1132              RC    .025    .015    .025     700   .0019
1133              RX     0.0     8.0    16.0      25      35      44      52      60
1134              RY     8.7     8.8     4.5       0       0     4.5     8.8     8.7
                  *
                  *

1135              KK  DIB65P
1136              KM         RETURN DIVERT TO DETENTION BASIN
1137              DR   DB65A
                  *
                  *
1                                          HEC-1 INPUT                                          PAGE 27

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

1138              KK   DB65A
1139              KM   SIPHON DRAW BASIN
1140              KM   OFF-LINE DETENTION BASIN LOCATED AT ELLIOT AND MERIDIAN ROAD
1141              KM   WITH  36" OUTLET PIPE AND 235' WEIR
                  * KO    2       2
1142              RS       1    STOR       0
```

```
1143          SA       0    4.67   15.05   27.12   37.88   42.12
1144          SE      90      91      93      95      97      98
1145          SL    91.5    7.07     .62      .5
1146          SS    97.0     235     2.5     1.5
              *
              *

1147          KK   C65A2
1148          KM   RECOMBINE FLOWS FROM DETENTION BASIN AND SUNLAND SPRINGS CHANNEL.
1149          HC       2
              *
              *

1150          KK  65AT-1
1151          KM   REACH MN-1
1152          KM   ROUTE FROM DETENTION BASIN OUTLET TO ELLIOT ROAD AND MERIDIAN ROAD
1153          KM   CONCRETE CHANNEL ON EAST SIDE OF MERIDIAN ROAD ALGN.
1154          RS       1    FLOW      -1
1155          RC    .025    .015    .025     630   .0014
1156          RX       0       8      16      26      38      48      56      64
1157          RY     4.7     4.8     4.9       0       0     4.9     4.8     4.7
              *
              *

1158          KK  65AT-2
1159          KM   REACH ET-10, ET-11, ET-12 plus culverts ETC-4 AND ETC-3.
1160          KM   ROUTE FROM ELLIOT AND MERIDIAN, ALONG ELLIOT ROAD IN ELLIOT CHANNEL
1161          KM   TO ABOUT 0.6 MILES EAST OF CRISMON ROAD.
1162          KM   EARTH CHANNEL PORTION ON NORTH SIDE OF ELLIOT
              * KO     1
1163          RS       4    FLOW      -1
1164          RC    .025    .025    .025    7680   .0005
1165          RX       0       8      22      58      71     107     115     123
1166          RY     6.1     6.0     5.9       0       0     5.9     6.0     6.1
              *
              *

1167          KK    65AW
1168          KM   BASIN 65AW
1169          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1170          KM    L=      .9  Lca=      .6   S=   54.7  Kn= .049  LAG=  26.1
1171          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1172          BA     .43
1173          LG     .24     .25    5.30     .29   32.00
1174          UI     56.    176.    295.    391.    603.    594.    432.    316.    210.    101.
1175          UI     73.     43.     17.     17.     17.      0.      0.      0.      0.      0.
1176          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

1177          KK   R65AW
1178          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1179          DT   D65AW      31
1180          DI       0   10000
1181          DQ       0   10000
              *
              *

1182          KK  65AT65
1183          KM   ROUTE C65A TO BASIN 65B VIA A WASH,(THIS WASH IS NORTH OF SIPHON DRAW)
1184          KM   THIS IS THE PART OF 65A WHICH IS WEST OF THE MERIDIAN RD ALIGNMENT
              * KO     3
1185          RS      11    FLOW      -1
1186          RC    .045     .04    .045    9500    .007
1187          RX       0     500    1000    1003    1053    1056    1511    2011
1188          RY       4     3.5       3       0       0       2     2.5       3
              *
              *

1189          KK     65B
1190          KM   BASIN 65B
1191          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1192          KM    L=      2.0  Lca=      1.2   S=   37.5  Kn= .036  LAG=  36.6
1193          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1194          BA    1.37
1195          LG     .18     .25    6.00     .24   53.00
1196          UI    126.    218.    506.    669.    809.   1014.   1468.   1422.   1102.    901.
1197          UI    720.    562.    337.    218.    182.    126.     71.     39.     39.     39.
1198          UI     39.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1199          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1200          KK    R65B
1201          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1202          DT    D65B     120
1203          DI       0   10000
1204          DQ       0   10000
              *
              *

1205          KK   CP65B
              * KO     1
1206          KM   COMBINE FLOW FROM SUBBASIN 65AW (WEST OF MERIDIAN RD) WITH FLOW FROM
1207          KM   SUBBASIN 65B
1208          HC       2
              *
              *
```



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

1209          KK   DI65B
1210          KM        DIVERSION STRUCTURE TO ROUTE PEAK FLOW TO NEW
1211          KM        ELLIOT BASIN (EAST)
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```
1212          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
1213          DT  DIRS65
1214          DI       0    15.0      30   100.0     200   350.0     500     700     900   1500.
1215          DQ       0       0       0    70.0     170   320.0     470     670     870   1470.
              *
              *

1216          KK   CP65A
1217          KM   COMBINE FLOWS FROM ELLIOT CHANNEL AT NON DIVERTED FLOWS (51CFS) FROM
1218          KM   SUBBASIN 65B
1219          HC       2
              *
              *

1220          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
1221          KM        E. 104th St to E. of EA (Sta. 83+10 to Sta. 90+50)
              *       RD card used for routing
1222          RD     740  0.0064   0.012            CIRC     6.5
              *
              *

1223          KK   DR65B
              * KO     1
1224          KM        RETURN DIVERT TO EAST DETENTION BASIN
1225          DR  DIRS65
              *
              *

1226          KK   RS65A
1227          KM   ELLIOT BASIN, EAST
1228          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
1229          RS       1    STOR       0
1230          SV       0    5.40    9.30   13.90   18.80   24.00   29.50   35.30   41.40   48.00
1231          SE  1429.0  1433.0  1434.0  1435.0  1436.0  1437.0  1438.0  1439.0  1440.0  1441.0
1232          SL  1430.0  0.7854     .62      .5
1233          SS  1439.0     200     2.5     1.5
              *
              *
1                                        HEC-1 INPUT                                        PAGE 30

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


1234          KK    CP65
              *       "CP65B" changed to "CP65" -- SZ, 5-14, 1999
1235          KM   COMBINE FLOWS FROM EAST ELLIOT BASIN AND ELLIOT CHANNEL
1236          KM   BEFORE COMBINING WITH FLOWS FROM THE BYPASS CRISMON CHANNEL
              * KO     1
1237          HC       2
              *
              *

1238          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
1239          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
1240          RD     704  0.0064   0.012            CIRC     7.5
              *
              *

1241          KK  65T66A
1242          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
1243          RD     706  0.0047   0.012            CIRC     7.5
              *
              *

1244          KK  65T66B
1245          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
1246          RD     775  0.0048   0.012            CIRC     9.5
              *
              *

1247          KK  ADOT-E
1248          KM   INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY ENTERING 67A
1249          KM   FROM EAST ADOT DETENTION BASIN 4105.
              *     KO       1
1250          BA    0.01
1251          ZR  =QI A=ADOT EAST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              *

1252          KK  AET67A
1253          KM    ROUTE SUPERSTITION FLOW THROUGH 67A TO BASELINE ROAD
1254          IN      15
1255          RS       3    FLOW      -1
1256          RC    .045    .040    .045    5500    .010
1257          RX       0     100     110     120     130     140     150     250
1258          RY       5       4       3       1       1       3       4       5
              *
              *
1                                        HEC-1 INPUT                                        PAGE 31

              LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1259          KK     67A
1260          KM   BASIN 67A
1261          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1262          KM    L=      1.0  Lca=       .7   S=   42.9  Kn= .042  LAG=  25.7
1263          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1264          BA     .30
1265          LG     .21     .25    4.70     .39   43.00
1266          UI     39.    126.    208.    277.    433.    400.    292.    213.    134.     67.
1267          UI     47.     25.     12.     12.     12.      0.      0.      0.      0.      0.
1268          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1269          KK    R67A
1270          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1271          DT    D67A      21
1272          DI       0   10000
1273          DQ       0   10000
              *
              *

1274          KK    C67A
1275          KM    COMBINE FLOWS FROM ADOT-E AND SUBBASIN 67A
1276          HC       2
              *
              *

1277          KK   67ATC
1278          KM   ROUTE 67A TO 67C VIA WASH CROSSING BASELINE
1279          RS       4    FLOW      -1
1280          RC    .055    .045    .055    6300   .0071
1281          RX       0     500     980    1003    1007    1031    1511    2011
1282          RY       4     3.5       3       0       0       3     3.5       4
              *
              *

1283          KK    SUP2
1284          KM   INFLOW FROM NORTH OF SUPERSTITION FREEWAY, DISCHARGING INTO 67B
              *     KO       1
1285          BA    0.01
1286          ZR  =QI A=ADOT WEST BASIN B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
              *
              *

1287          KK   RSUP2
1288          KM   ROUTE SUP2 THROUGH SUBBASIN 67B
              * KO              2
1289          IN      15
1290          RS      11    FLOW      -1
1291          RC    .045    .045    .045    4500   .0056
1292          RX       0     500    1000    1003    1007    1011    1511    2011
1293          RY       4     3.5       3       0       0       2     2.5       3
              *
              *
1                                        HEC-1 INPUT                                                PAGE 32

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


1294          KK     67B
1295          KM   BASIN 67B
1296          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1297          KM    L=      1.2  Lca=       .9   S=   28.0  Kn= .034  LAG=  26.4
1298          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1299          BA     .53
1300          LG     .17     .25    4.90     .38   56.00
1301          UI     68.    210.    356.    470.    713.    741.    536.    395.    269.    131.
1302          UI     94.     59.     21.     21.     21.      0.      0.      0.      0.      0.
1303          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1304          KK    R67B
1305          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1306          DT    D67B      41
1307          DI       0   10000
1308          DQ       0   10000
              *
              *

1309          KK    C67B
1310          KM   COMBINE FLOWS FROM SUP2 AND SUBBASIN 67B
              * KO             2
1311          HC       2
              *
              *

1312          KK   67BTC
1313          KM   REACH CN-4, CN-5 plus culvert CNC-4.
1314          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM BASELINE ROAD (C67B) TO
1315          KM      GUADALUPE ROAD (C67C)
1316          RS       2    FLOW      -1
1317          RC    .025    .015    .025    5180   .0019
1318          RX       0       8      16    24.4    36.4    44.8    52.8    60.8
1319          RY     4.0     4.1     4.2       0       0     4.2     4.1     4.0
              *
              *

1320          KK     67C
1321          KM   BASIN 67C
1322          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1323          KM    L=      1.2  Lca=       .7   S=   40.2  Kn= .049  LAG=  32.3
1324          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1325          BA     .93
1326          LG     .25     .25    5.10     .32   31.00
1327          UI     96.    213.    432.    557.    702.   1006.   1133.    842.    667.    518.
1328          UI    365.    193.    157.     96.     59.     30.     30.     30.     30.      0.
1329          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
```

```
1330          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                                    PAGE 33

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

1331          KK    R67C
1332          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1333          DT    D67C      67
1334          DI       0   10000
1335          DQ       0   10000
              *
              *

1336          KK    C67C
1337          KM   COMBINE SUBBASINS 67C AND 67A AND 67B
1338          HC       3
              *
              *

1339          KK  67CT67
1340          KM   REACH CN-3 plus culvert CNC-3
1341          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM C67C (@ GUADALUPE ROAD & CRISMON ROAD)
1342          KM    TO C67D (AT APPROX. 1/2 MILE SOUTH OF GUADALUPE ROAD).
              *       Sta. 39+00 to Guadalupe Rd.
1343          RS       1    FLOW      -1
1344          RC    .025    .015    .025    2420   .0018
1345          RX       0       6      12      24      64      76      82      88
1346          RY       4       3       2       0       0       2       3       4
              *
              *

1347          KK     67D
1348          KM   BASIN 67D
1349          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1350          KM    L=       .6  Lca=       .4   S=   34.7  Kn= .050  LAG=  20.5
1351          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1352          BA     .13
1353          LG     .25     .25    5.20     .30   30.00
1354          UI     23.     87.    132.    216.    202.    137.     86.     38.     23.      9.
1355          UI      6.      6.      0.      0.      0.      0.      0.      0.      0.      0.
1356          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1357          KK    R67D
1358          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1359          DT    D67D       9
1360          DI       0   10000
1361          DQ       0   10000
              *
              *

1362          KK    C67D
1363          KM    COMBINE HYDROGRAPHS AT CP67D
1364          HC       2
              *
              *
1                                        HEC-1 INPUT                                                    PAGE 34

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

1365          KK  67DT66
1366          KM   REACH CN-2 plus culvert CNC-2
1367          KM   ROUTE FLOW IN THE CRISMON CHANNEL FROM APPROX. 1/2 MILE SOUTH
1368          KM    OF GUADALUPE ROAD TO THE INFLOW SPILLWAY FOR THE ELLIOT DETENTION BASIN.
              *       Sta. 20+00 to Sta. 39+00
1369          RS       1    FLOW      -1
1370          RC    .032    .032    .032    1900  0.0035
1371          RX       0       6      12      24      64      76      82      88
1372          RY       4       3       2       0       0       2       3       4
              *
              *

1373          KK     66A
1374          KM   BASIN 66A
1375          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1376          KM    L=       .7  Lca=       .3   S=   55.9  Kn= .047  LAG=  17.1
1377          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1378          BA     .26
1379          LG     .24     .25    6.00     .22   35.00
1380          UI     78.    256.    417.    576.    363.    205.     84.     39.     16.     16.
1381          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1382          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1383          KK    R66A
1384          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1385          DT    D66A      21
1386          DI       0   10000
1387          DQ       0   10000
              *
              *

1388          KK   66ATB
1389          KM   ROUTE S66A TO 66B VIA WASH CROSSING BASELINE
1390          RS       9    FLOW      -1
1391          RC    .045     .04    .045    7500   .0077
1392          RX       0     500     980    1003    1007    1031    1511    2011
1393          RY       4     3.5       3       0       0       3     3.5       4
              *
              *

1394          KK     66B
1395          KM   BASIN 66B
1396          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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```
1397          KM    L=      1.6  Lca=      1.0   S=   43.3  Kn= .050  LAG=  42.8
1398          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1399          BA     .67
1400          LG     .25     .25    5.00     .33   30.00
1401          UI     53.     56.    185.    248.    297.    352.    426.    590.    636.    496.
1402          UI    419.    346.    286.    232.    152.     93.     86.     58.     53.     21.
1403          UI     16.     16.     16.     16.     16.      0.      0.      0.      0.      0.
1404          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


1405          KK    R66B
1406          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1407          DT    D66B      48
1408          DI       0   10000
1409          DQ       0   10000
              *
              *

1410          KK   CP66B
1411          KM   COMBINE S66A AND S66B
1412          HC       2
              *
              *

1413          KK   66BTC
1414          KM   ROUTE 66B TO 66C VIA WASH
1415          RS       4    FLOW      -1
1416          RC    .045     .04    .045    6000   .0150
1417          RX       0     500     995    1003    1007    1016    1511    2011
1418          RY       4     3.5       3       0       0       3     3.5       4
              *
              *

1419          KK     66C
1420          KM   BASIN 66C
1421          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1422          KM    L=      1.1  Lca=       .7   S=   46.5  Kn= .039  LAG=  24.3
1423          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1424          BA     .50
1425          LG     .19     .25    5.40     .29   48.00
1426          UI     69.    243.    385.    528.    817.    635.    463.    325.    159.    103.
1427          UI     63.     21.     21.     21.      0.      0.      0.      0.      0.      0.
1428          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1429          KK    R66C
1430          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1431          DT    D66C      42
1432          DI       0   10000
1433          DQ       0   10000
              *
              *

1434          KK  CP66C1
1435          KM   Split up hydrograph combination in order to separate flows.
1436          KM   Combine Hydrographs 66BTC (from Sub. 66A)and R66C (from Sub. 66C)
              * KO      2       2
1437          HC       2
              *
              *
1                                       HEC-1 INPUT                                          PAGE 36

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


1438          KK  CP66C2
1439          KM   Combine Hydrograph CP66C1 (from Subbasins 66A, 66B and 66C)
1440          KM     plus hydrograph 67DT66 ( C67D )
              * KO      1
1441          HC       2
              *
              *

1442          KK    DI66
1443          KM    DIVERT FLOW TO DETENTION BASIN WA
1444          KM    By-pass Flow Reduced to 410 cfs from 458, SZ, 5-17-99
              * KO      1       2
1445          DT    DB66
1446          DI       0     150     363   411.0   456.0     513     577     643     712    1000
1447          DQ       0       0       0    32.0     71.     122     179     239     302     590
              *
              *

1448          KK  66C1T2
1449          KM    ROUTE FLOW FROM DIVERSION STRUCTURE TO ELLIOT CHANNEL at ELLIOT ROAD.
1450          KM    REACH CN-1 plus culvert CNC-1
1451          KM        A single pipe size and an overall slope are used to represent this
1452          KM        1,070 ft long reach which has pipe sizes of 78", 84" and 90", and
1453          KM        about 250' long sideweir and transition open channel.
1454          KM        RD card used for routing (Sta. 9+30 to Sta. 20+00)
1455          RD    1070  0.0130   0.012           CIRC       7
              *
              *

1456          KK   CP66C
1457          KM   COMBINE FLOWS FROM ELLIOT CHANNEL AND CRISMON BYPASS CHANNEL
              * KO      1
1458          HC       2
              *
              *

1459          KK   66CTD
              * KM REACH ET-7
1460          KM   ROUTE FLOWS FROM INTERSECTION OF CRISMON AND ELLIOT CHANNELS
```

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1461          KM      AT THE INTERSECTION OF ELLIOT ROAD and CRISMON ROAD TO THE ELLIOT BASIN
1462          KM      WA Bleed-off Outlet, WHICH IS ABOUT 390 ft WEST OF CRISMON ROAD.
              *       RD card used for routing (Sta. 57+35 to Sta. 61+25)
1463          RD     390  0.0052   0.012            CIRC     9.5
              *
              *

1464          KK    DR66
              * KO     1
1465          KM         RETURN DIVERT TO DETENTION BASIN FROM DIVERSION STRUCTURE
1466          DR    DB66
              *
              *
1                                        HEC-1 INPUT                                                PAGE 37

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


1467          KK  RS66D1
              * KO     1
1468          KM   ELLIOT BASIN, WEST A
1469          KM   TWO PONDS OPERATING IN SERIES.
1470          KM        Bottom Elevation Lowered to 1415.0 ft from 1420, and 18" Bleed-off
1471          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
1472          RS       1    STOR       0
1473          SV       0    1.60   10.00   25.50   34.70   44.20   54.10   64.40   75.10   86.00
1474          SE  1415.0    1417    1419    1421    1422    1423    1424    1425    1426    1427
1475          SL  1416.0  1.7672     .62      .5
1476          SS  1423.5      20     3.0     1.5
              *
              *


1477          KK    B-WA
1478          KM        Bleed-off Flow from WA to Elliot Channel = 18" Pipe, SZ, 6-15-99
1479          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
1480          DT    D-WB
1481          DI       0       5      10      15   17.59   40.87   80.62  131.76  192.12  260.43
1482          DQ       0       0       0       0       0    21.2    60.0   110.2   169.7   237.2
              *
              *


1483          KK    C-WA
1484          KM        Combine Bleed-off Flow from WA with Flow in Elliot Channel
              *       Added by SZ, 5-17-99
1485          HC       2
              *
              *


1486          KK   RC-WA
1487          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
1488          KM      WA Bleed-off Outlet to WB Bleed-off Outlet.
              *       RD card used for routing (Sta. 48+80 to Sta. 57+35)
1489          RD     855  0.0052   0.012            CIRC     9.5
              *
              *


1490          KK   DR-WA
1491          KM        Return Diverted Flow (Spillway) to WB from WA, SZ 5-7-99
              * KO     1
1492          DR    D-WB
              *
              *
1                                        HEC-1 INPUT                                                PAGE 38

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


1493          KK  RS66D2
              * KO     1
1494          KM   ELLIOT BASIN, WEST B
1495          KM   TWO PONDS OPERATING IN SERIES.
1496          KM        Bottom Elevation Lowered to 1413.5 ft from 1414, and 36" Bleed-off
1497          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
1498          RS       1    STOR       0
1499          SV       0    4.40    8.80   14.50   21.00   28.00   35.30   42.90   50.90   59.20
1500          SE  1412.0    1415    1416    1417    1418    1419    1420    1421    1422    1423
1501          SL  1413.0  1.7672     .62      .5
1502          SS  1422.6      50     2.5     1.5
              *
              *


1503          KK   CP66D
1504          KM       COMBINE FLOWS FROM WEST ELLIOT BASIN AND ELLIOT CHANNEL
1505          KM       AT THE OUTLET PIPE.
              * KO     1
1506          HC       2
              *
              *


1507          KK  66T66D
              * KM REACH ET-6
1508          KM        ROUTE FROM DETENTION BASIN WB OUTLET TO ELLSWORTH RD
1509          KM        2350 -> 3200,  SZ, 5-17-99
              *       First portion
              *       RD card used for routing (Sta. 36+44 to 48+80)
1510          RD    1236  0.0052   0.012            CIRC     9.5
              *
              *
```

```
1511          KK  66-66D
              * KM REACH ET-6
1512          KM        ROUTE FROM DETENTION BASIN WB OUTLET TO ELLSWORTH RD
1513          KM        2350 -> 3200,  SZ, 5-17-99
              *       Second portion
              *       RD card used for routing (Sta. 12+46 to Sta. 36+44)
1514          RD    2398  0.0040   0.012            CIRC     9.5
              *
              *

1515          KK     66D
1516          KM   BASIN 66D
1517          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1518          KM    L=      1.0  Lca=       .7   S=   28.6  Kn= .020  LAG=  13.2
1519          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1520          BA     .31
1521          LG     .10     .17    6.80     .19   80.00
1522          UI    162.    480.    845.    540.    232.     89.     24.      0.      0.      0.
1523          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                          PAGE 39

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


1524          KK    R66D
1525          KM   RETENTION REDUCED BY 77% FROM 31 TO 7 AC-FT
1526          KM   DUE TO DEVELOPMENT USING DETENTION BASIN
              *   The developer does not participate in the basin so the retention volume
              *   increased to 31 A-F
1527          DT    D66D      31
1528          DI       0   10000
1529          DQ       0   10000
              *
              *

1530          KK     61A
1531          KM   BASIN 61A
1532          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1533          KM    L=       .9  Lca=       .4   S=   36.8  Kn= .037  LAG=  19.1
1534          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1535          BA     .52
1536          LG     .19     .25    4.20     .56   52.00
1537          UI    117.    412.    628.   1037.    786.    517.    261.    132.     62.     28.
1538          UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1539          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1540          KK    R61A
1541          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1542          DT    D61A      42
1543          DI       0   10000
1544          DQ       0   10000
              *
              *

1545          KK   61ATB
1546          KM   ROUTING 61A TO 61B VIA ELLSWORTH ROAD
1547          RS      10    FLOW      -1
1548          RC    .035    .024    .035    5280    .005
1549          RX       0     500     750     752     802     852    1102    1602
1550          RY       3       2     1.5     1.2     1.2     1.5       2       3
              *
              *

1551          KK     61B
1552          KM   BASIN 61B
1553          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1554          KM    L=      1.4  Lca=       .7   S=   39.7  Kn= .047  LAG=  33.6
1555          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1556          BA    1.09
1557          LG     .24     .25    4.80     .37   35.00
1558          UI    109.    223.    475.    615.    765.   1049.   1335.   1025.    822.    643.
1559          UI    495.    288.    187.    143.    109.     36.     34.     34.     34.     34.
1560          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1561          UI      0.      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


1562          KK    R61B
1563          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1564          DT    D61B      81
1565          DI       0   10000
1566          DQ       0   10000
              *
              *


1567          KK   CP61B
1568          KM   COMBINE FLOWS FROM S61A AND S61B
1569          HC       2
              *
              *

1570          KK  61T66D
1571          KM   ROUTE CP61B TO SUBBASIN 66D ALONG ELLSWORTH ROAD. ROUTING WILL BE
1572          KM   THE SAME AS WAS GIVEN FOR SUBBASIN 61A
1573          RS       9    FLOW      -1
1574          RC    .035    .024    .035    5280    .008
1575          RX       0     500     750     752     802     852    1102    1602
1576          RY       3       2     1.5     1.2     1.2     1.5       2       3
              *
              *

1577          KK     67E
```

```
1578          KM   BASIN 67E
1579          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1580          KM    L=      1.2  Lca=       .7   S=   32.3  Kn= .038  LAG=  26.9
1581          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1582          BA     .58
1583          LG     .19     .25    5.40     .30   50.00
1584          UI     73.    219.    378.    496.    732.    830.    597.    443.    315.    157.
1585          UI    110.     73.     24.     22.     22.     22.      0.      0.      0.      0.
1586          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1587          KK    R67E
1588          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1589          KM   DUE TO DEVELOPMENT USING DETENTION BASIN
1590          DT    D67E      50
1591          DI       0   10000
1592          DQ       0   10000
              *
              *

1593          KK    C67E
1594          KM   COMBINE FLOWS FROM ELLSWORTH ROAD JUST NORTH OF ELLIOT ROAD
1595          HC       2
              *
              *
1                                       HEC-1 INPUT                                          PAGE 41

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


1596          KK    C66D
1597          KM   COMBINE ELLIOT CHANNEL FLOW WITH HYDROGRAPH C67E @ ELLIOT RD & ELLSWORTH RD.
1598          HC       3
              *
              *

1599          KK  66T23A
1600          KM    NAME WAS CHANGED FROM 66T70A TO 66T23A
1601          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)
1602          RD     253  0.0015   0.012            CIRC     9.5
              *
              *

1603          KK  66T23B
1604          KM    NAME WAS CHANGED FROM 66T70B TO 66T23B
1605          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)
1606          RD    1186  0.0015   0.012            CIRC      12
              *
              *

1607          KK   CULVT
1608          KM        Pipe Routing, Culvert
              *       2-102" pipe culvert crossing Ellsworth Rd.
              *       RD card used for routing
1609          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
              *
              *

1610          KK  66T23C
1611          KM   ROUTE ELLIOT STORM DRAIN FLOW SOUTH TO MESQUITE ROAD ALIGNMENT ALONG THE
1612          KM   WEST SIDE OF ELLSWORTH ROAD VIA ENGINEERED CHANNEL.
1613          RS       1    FLOW      -1
1614          RC    .032    .032    .032    1000   .0021
1615          RX       0       5      10      46      56      92      97     102
1616          RY      10     9.5       9       0       0       9     9.5      10
              *
              *
              * ************************************************************************
1                                       HEC-1 INPUT                                          PAGE 42

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


1617          KK      04   BASIN
1618          KM    BASIN 04
1619          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1620          KM    L=0.86  Lca=0.53  S=17.4  Kn=0.042  LAG=26.1
1621          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1622          BA   0.284
1623          LG    0.25    0.15    8.85    0.09      46
1624          UI       0      37     116     194     257     396     390     283     207     138
1625          UI      66      48      28      11      11      11       0       0       0       0
1626          UI       0       0       0       0       0       0       0       0       0       0
1627          UI       0       0       0       0       0       0       0       0       0       0
1628          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1629          KK   RET04  DIVERT
1630          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO     2
1631          DT   04RET   28.16     0.0
1632          DI       0   10000
1633          DQ       0   10000
              *
              *
```

```
                * ************************************************************************
1634            KK    CP23
1635            KM   COMBINE FLOW FROM 66T23C AND BASIN 04.
                * KO     2
1636            HC       2
                *
                *

1637            KK  66T23D
1638            KM   ROUTE ELLIOT STORM DRAIN FLOW WEST TO LOOP 202 EAST CHANNEL ALONG THE NORTH
1639            KM   SIDE OF THE MESQUITE ROAD ALIGNMENT VIA ENGINEERED CHANNEL.
1640            RS       1    FLOW      -1
1641            RC    .032    .032    .032    2300   .0021
1642            RX       0       5      10      46      56      92      97     102
1643            RY      10     9.5       9       0       0       9     9.5      10
                *
                *

1644            KK     62C
1645            KM   BASIN 62C
1646            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1647            KM    L=       .6  Lca=       .3   S=   24.2  Kn= .049  LAG=  19.8
1648            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1649            BA     .55
1650            LG     .23     .25    4.65     .40   47.00
1651            UI    112.    406.    615.   1024.    853.    571.    330.    154.     83.     28.
1652            UI     28.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1653            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *
1                                       HEC-1 INPUT                                          PAGE 43

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


1654            KK    R62C
1655            KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1656            DT    D62C      31
1657            DI       0   10000
1658            DQ       0   10000
                *
                *

1659            KK   62CTE
1660            KM   ROUTE BASIN 62C TO BASIN 62E BY CHANNEL ON EAST SIDE OF PROPOSED SANTAN
1661            KM   FREEWAY ALIGNMENT
1662            RS       3    FLOW      -1
1663            RC    .030    .030    .030    2000   .0003
1664            RX       0       5      10      25      45      55      60      65
1665            RY       8       7     6.5       0       0     6.5       7       8
                *
                *

1666            KK     62E
1667            KM   BASIN 62E
1668            KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1669            KM    L=       .6  Lca=       .3   S=   31.9  Kn= .050  LAG=  20.4
1670            KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1671            BA     .15
1672            LG     .25     .25    4.65     .39   45.00
1673            UI     29.    108.    163.    268.    246.    167.    104.     46.     28.     10.
1674            UI      8.      8.      0.      0.      0.      0.      0.      0.      0.      0.
1675            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

1676            KK    R62E
1677            KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1678            DT    D62E      12
1679            DI       0   10000
1680            DQ       0   10000
                *
                *

1681            KK   CP62E
1682            KM   COMBINE FLOWS FROM SUBBASIN 62C AND SUBBASIN 62E
1683            HC       2
                *
                *

1684            KK  62T68A
1685            KM   ROUTE FLOW FROM CP62E TO SUBBASIN 68A BY CHANNEL ALONG PROPOSED ALIGNMENT
1686            KM   OF THE SANTAN FREEWAY
                * ZW   A=62T68A   B=NORTH OF ELLIOT  C=FLOW    F=100YR FUTURE
1687            RS       5    FLOW      -1
1688            RC    .030    .030    .030    3280  .00015
1689            RX       0       5      10      20      30      40      45      50
1690            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 44

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1691          KK    68A1   BASIN
1692          KM   BASIN 68A1
1693          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1694          KM    L=0.92  Lca=0.46  S=37.7  Kn=0.030  LAG=15.6
1695          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1696          BA   0.297
1697          LG    0.16    0.25    5.70    0.27       3
1698          UI     106     340     612     604     368     151      73      20      20       0
1699          UI       0       0       0       0       0       0       0       0       0       0
              *

1700          KK    68A2   BASIN
1701          KM   BASIN 68A2
1702          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1703          KM    L=0.50  Lca=0.25  S=37.8  Kn=0.030  LAG=9.8
1704          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1705          BA   0.048
1706          LG    0.16    0.25    5.70    0.27      80
1707          UI      46     147     124      41       9       0       0       0       0       0
1708          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1709          KK  CP68A1
1710          KM   COMBINE FLOWS FROM BASINS 68A1 AND 68A2
1711          HC       2
              *
              *

1712          KK    R68A
1713          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1714          DT    D68A      31
1715          DI       0   10000
1716          DQ       0   10000
              *
              *

1717          KK  CP68A2
1718          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
1719          HC       2
              *
              *

1720          KK  68T70A
1721          KM   ROUTE FLOW FROM CP68A AT ELLIOT AND SANTAN FREEWAY ALIGNMENT TO SUBBASIN
1722          KM   70A, AT THE POINT WHERE SIPHON DRAW INTERSECTS THE FREEWAY ALIGNMENT
1723          KM   CHANNEL IS NATURAL AND ONLY APPROXIMATE IN ROUTING PARAMETERS
1724          RS       5    FLOW      -1
1725          RC    .030    .030    .030    3960   .0006
1726          RX       0       5      10      20      30      40      45      50
1727          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

1728          KK    70A1   BASIN
1729          KM   BASIN 70A1
1730          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1731          KM    L=0.52  Lca=0.26  S=3.8  Kn=0.030  LAG=15.7
1732          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1733          BA   0.053
1734          LG    0.10    0.25    5.70    0.29      80
1735          UI      18      61     106     110      65      29      13       3       4       0
1736          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1737          KK      23   BASIN
1738          KM   BASIN 23
1739          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1740          KM    L=0.78  Lca=0.36  S=17.9  Kn=0.036  LAG=18.5
1741          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1742          BA   0.218
1743          LG    0.10    0.21    6.40    0.22      76
1744          UI      53     183     283     450     325     206      93      51      19      12
1745          UI      12       0       0       0       0       0       0       0       0       0
1746          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1747          KK   RET23  DIVERT
1748          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1749          DT   23RET    22.7     0.0
1750          DI       0   10000
1751          DQ       0   10000
              *
              *

1752          KK   C70A1
1753          KM   COMBINE FLOWS FROM 68T70A, 66T23D, BASIN 70A1, AND BASIN 23.
              * KO     2
1754          HC       4
              *
              *

1755          KK  70A1T2
1756          KM   ROUTE FLOW ALONG LOOP 202 WITHIN THE EAST CHANNEL FROM MESQUITE ROAD TO
1757          KM   WARNER ROAD.
1758          RS       2    FLOW      -1
1759          RC    .025    .025    .025    2675  0.0005
1760          RX       0       8      16      59      91     134     142     150
1761          RY     7.4     7.3     7.2       0       0     7.2     7.1     7.0
              *
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1762          KK      24   BASIN
1763          KM   BASIN 24
1764          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1765          KM    L=0.83  Lca=0.38  S=24.1  Kn=0.035  LAG=17.8
1766          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1767          BA   0.252
1768          LG    0.10    0.15    8.80    0.09      79
1769          UI      67     229     357     538     359     221      91      51      14      15
1770          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1771          KK   RET24  DIVERT
1772          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1773          DT   24RET    26.5     0.0
1774          DI       0   10000
1775          DQ       0   10000
              *
              *

1776          KK    70A2   BASIN
1777          KM   BASIN 70A2
1778          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1779          KM    L=0.51  Lca=0.26  S=19.6  Kn=0.030  LAG=11.4
1780          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1781          BA   0.036
1782          LG    0.10    0.15    8.40    0.10      80
1783          UI      25      77     106      49      15       4       0       0       0       0
1784          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1785          KK  CP70A2
1786          KM   COMBINE FLOWS FROM 70A1T2 AND BASINS 24 AND 70A2
1787          KM
1788          HC       3
              *
              *

1789          KK  70T76A
1790          KM   DIBBLE DRAINAGE FACILITY
1791          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT
1792          KM   REACH ET-3A, ET-3B
1793          RS       4    FLOW     -1
1794          RC    .025    .025    .025    4500  0.0005
1795          RX       0       8      16      59      91     134     142     150
1796          RY     7.4     7.3     7.2       0       0     7.2     7.1     7.0
              *
              *
1                                        HEC-1 INPUT                                                PAGE 47

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


1797          KK     76A
1798          KM   BASIN 76A
1799          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1800          KM    L=      2.9  Lca=      1.7   S=   24.1  Kn= .030  LAG=  42.9
1801          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1802          BA    1.91
1803          LG     .15     .15    8.80     .08   56.00
1804          UI    150.    159.    528.    707.    847.   1004.   1213.   1673.   1826.   1424.
1805          UI   1201.    992.    822.    667.    444.    266.    247.    171.    150.     65.
1806          UI     46.     46.     46.     46.     46.      0.      0.      0.      0.      0.
1807          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1808          KK    R76A
1809          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1810          DT    D76A     185
1811          DI       0   10000
1812          DQ       0   10000
              *
              *

1813          KK    C76A
1814          KM    COMBINE HYDROGRAPHS 70T76A (SANTAN FREEWAY CHANNEL FLOWS) WITH SUBBASIN 76A
              * KO     2
1815          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
              *
              *

1816          KK  76ATPR
1817          KM   DIBBLE DRAINAGE FACILITY
1818          KM   ROUTE FLOW ALONG NEW SANTAN FREEWAY ALIGNMENT TO NEW POWERLINE FLOODWAY ALGN.
1819          KM   REACH ET-2A, ET-2B
1820          RS       5    FLOW     -1
1821          RC    .025    .025    .025    5750  0.0005
1822          RX       0       8      16      61      93     138     146     154
1823          RY     7.7     7.6     7.5       0       0     7.5     7.4     7.3
              *
              *
1                                        HEC-1 INPUT                                                PAGE 48

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1824          KK     73A
1825          KM   BASIN 73A
1826          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1827          KM    L=      2.3  Lca=      1.0   S=   34.9  Kn= .093  LAG=  94.5
1828          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1829          BA     .95
1830          LG     .35     .36    5.00     .27     .00
1831          UI     34.     34.     34.     34.     84.    117.    134.    158.    171.    185.
1832          UI    197.    214.    232.    254.    274.    317.    381.    429.    424.    369.
1833          UI    332.    303.    282.    263.    240.    220.    202.    185.    169.    157.
1834          UI    134.    107.     90.     60.     60.     57.     55.     54.     34.     34.
1835          UI     34.     34.     16.     10.     10.     10.     10.     10.     10.     10.
1836          UI     10.     10.     10.     10.     10.     10.      0.      0.      0.      0.
1837          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1838          KK   73ATB   ROUTE
1839          KM   ROUTE FLOW FROM BASIN 73A THROUGH THE MOUNTAIN HEIGHTS DEVELOPEMENT FROM
1840          KM   MERIDIAN ROAD TO MOUNTAIN ROAD.
1841          RS       2    FLOW      -1
1842          RC   0.045   0.040   0.045    2830  0.0050    0.00
1843          RX    0.00    5.00   10.00   20.00  120.00  130.00  135.00  140.00
1844          RY    4.00    3.00    2.50    0.00    0.00    2.50    3.00    4.00
              *
              *

1845          KK     73B   BASIN
1846          KM   BASIN 73B
1847          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1848          KM    L=0.56  Lca=0.28  S=30.4  Kn=0.040  LAG=14.9
1849          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1850          BA   0.425
1851          LG    0.25    0.25    5.40    0.27      30
1852          UI     169     530     973     829     481     180      73      30       0       0
1853          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1854          KK  RET73B  DIVERT
1855          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1856          DT  73BRET   39.41     0.0
1857          DI       0   10000
1858          DQ       0   10000
              *
              *

1859          KK   CP73B COMBINE
1860          KM   COMBINE HYDROGRAPHS 73ATB AND BASIN 73B
1861          HC       2
              *
              *
1                                        HEC-1 INPUT                                                PAGE 49

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

1862          KK   73BTC   ROUTE
1863          KM   ROUTE FLOW THROUGH THE NOVA VISTA DEVELOPEMENT FROM MOUNTAIN ROAD TO
1864          KM   SIGNAL BUTTE ROAD.
1865          RS       4    FLOW      -1
1866          RC   0.045   0.040   0.045    4500  0.0050    0.00
1867          RX    0.00    5.00   10.00   22.00  122.00  134.00  139.00  144.00
1868          RY    4.00    3.50    3.00    0.00    0.00    3.00    3.50    4.00
              *
              *

1869          KK     73C   BASIN
1870          KM   BASIN 73C
1871          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1872          KM    L=1.33  Lca=0.30  S=22.6  Kn=0.040  LAG=22.5
1873          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1874          BA   0.585
1875          LG    0.25    0.25    5.40    0.27      30
1876          UI      88     344     512     764    1019     695     488     287     149      88
1877          UI      31      27      26       0       0       0       0       0       0       0
1878          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1879          KK  RET73C  DIVERT
1880          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1881          DT  73CRET   37.21     0.0
1882          DI       0   10000
1883          DQ       0   10000
              *
              *

1884          KK   CP73C COMBINE
1885          KM   COMBINE HYDROGRAPHS 73BTC AND BASIN 73C
1886          HC       2
              *
              *

1887          KK  73T74C   ROUTE
1888          KM   ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN
1889          KM   ENGINEERED CHANNEL FROM WARNER ROAD TO THE POWERLINE FLOODWAY.
1890          RS      20    FLOW      -1
1891          RC   0.032   0.032   0.032    4670   .0024
1892          RX       0       5      10      31      69    79.5    84.5    89.5
1893          RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
              *
              * ****************************************************************************
              *

1894          KK     74A
1895          KM   BASIN 74A
1896          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

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1897          KM    L=      2.4  Lca=      1.0   S=   42.2  Kn= .095  LAG=  92.9
1898          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
              * KO     2       2
1                                        HEC-1 INPUT                                                    PAGE 50

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

1899          BA     .75
1900          LG     .35     .36    5.00     .27     .00
1901          UI     27.     27.     27.     27.     73.     96.    111.    129.    140.    151.
1902          UI    163.    175.    193.    208.    228.    268.    317.    362.    327.    287.
1903          UI    260.    239.    222.    206.    187.    171.    160.    142.    132.    118.
1904          UI     99.     79.     56.     48.     47.     45.     45.     32.     27.     27.
1905          UI     27.     19.      8.      8.      8.      8.      8.      8.      8.      8.
1906          UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
1907          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1908          KK   74ATB   ROUTE
1909          KM   ROUTE FLOW FROM BASIN 74A VIA THE POWERLINE FLOODWAY FROM MERIDIAN ROAD TO
1910          KM   MOUNTAIN ROAD. FLOW ENTERS THE POWERLINE FLOODWAY VIA A 75FT WEIR ON THE
1911          KM   NORTHWEST CORNER OF THE MERIDIAN ROAD AND POWERLINE FLOODWAY INTERSECTION.
1912          RS      1    FLOW     -1
1913          RC   0.013   0.013   0.013    3200  0.0060    0.00
1914          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
1915          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
              *
              *

1916          KK     74B   BASIN
1917          KM   BASIN 74B
1918          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1919          KM    L=1.31  Lca=0.41  S=23.7  Kn=0.040  LAG=24.9
1920          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1921          BA   0.333
1922          LG    0.25    0.25    5.80    0.22      30
1923          UI      45     154     245     330     528     430     318     229     122      76
1924          UI      44      18      14      14       0       0       0       0       0       0
1925          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1926          KK  RET74B  DIVERT
1927          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1928          DT  74BRET   17.75     0.0
1929          DI       0   10000
1930          DQ       0   10000
              *
              *

1931          KK   CP74B COMBINE
1932          KM   COMBINE HYDROGRAPHS 74ATB AND BASIN 74B
1933          HC       2
              *
              *
1                                        HEC-1 INPUT                                                    PAGE 51

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

1934          KK   74BTC   ROUTE
1935          KM   ROUTE FLOW VIA THE POWERLINE FLOODWAY FROM MOUNTAIN ROAD TO SIGNAL BUTTE
1936          KM   ROAD.
1937          RS      1    FLOW     -1
1938          RC   0.013   0.013   0.013    3100  0.0055    0.00
1939          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
1940          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
              *
              *

1941          KK     74C   BASIN
1942          KM   BASIN 74C
1943          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1944          KM    L=1.22  Lca=0.40  S=25.4  Kn=0.040  LAG=23.7
1945          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1946          BA   0.345
1947          LG    0.25    0.17    6.80    0.15      30
1948          UI      48     180     276     386     588     428     310     211      97      65
1949          UI      35      15      15      16       0       0       0       0       0       0
1950          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1951          KK  RET74C  DIVERT
1952          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1953          DT  74CRET   23.7     0.0
1954          DI       0   10000
1955          DQ       0   10000
              *
              *

1956          KK   CP74C COMBINE
1957          KM   COMBINE HYDROGRAPHS 73T74C, 74BTC, AND BASIN 74C
              * KO     2
1958          HC       3
              *
              * ************************************************************************

1959          KK  RET10B  DIVERT
1960          KM   RETAIN A PORTION OF RAY ROAD
1961          KM   BASINS C & D FROM RAY ROAD IMPROVEMENT PLANS
1962          KM   BASINS OVERFLOW INTO POWERLINE FLOODWAY
1963          DT  10BRET    5.55     0.0
1964          DI       0   10000
1965          DQ       0   10000
              *

1966          KK  10BT75
1967          KM  ROUTE FLOW FROM IN THE POWERLINE FLOODWAY FROM RET10A TO CP75
```

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1968          KM  THE NSTEP FOR THIS ROUTING WOULD NOT CONVERGE ON A VALUE AS
1969          KM  IT OSCILLATED BETWEEN 3 AND 20. THE ASSUMPTION WAS MADE OF
1970          KM  5 FEET PER SEC ACROSS THE ROUTING WHICH GIVES AN NSTEP OF 7.
1971          RS       7    FLOW      -1
1972          RC   0.030   0.013   0.030   10500   .0038
1                                        HEC-1 INPUT                                                    PAGE 52

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

1973          RX       0      15    16.5      25      33    41.5      43      58
1974          RY     6.6     6.6     5.6       0       0     5.6     6.6     6.6
                    *
                    *
                    * ********************************************************************************

1975          KK     02B   BASIN
1976          KM    BASIN 02B
1977          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1978          KM    L=1.02  Lca=0.26  S=18.6  Kn=0.040  LAG=20.0
1979          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1980          BA   0.233
1981          LG    0.25    0.25    5.34    0.31      57
1982          UI       0      46     170     258     428     367     247     147      67      38
1983          UI      12      12       0       0       0       0       0       0       0       0
1984          UI       0       0       0       0       0       0       0       0       0       0
1985          UI       0       0       0       0       0       0       0       0       0       0
1986          UI       0       0       0       0       0       0       0       0       0       0
                    *
                    *

1987          KK  RET02B  DIVERT
1988          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
1989          DT  02BRET   24.49       0
1990          DI       0   10000
1991          DQ       0   10000
                    *
                    *

1992          KK    2BT2   ROUTE
1993          KM   ROUTE FLOW IN EXCESS OF THE 100-YEAR, 2-HR STORM OVERLAND TO
1994          KM   DRAINAGE CORRIDOR ALONG SUBBASIN 1 AND SUBBASIN 5A BOUNDARY
1995          RS      12    FLOW      -1
1996          RC   0.032   0.032   0.032     990  0.0031
1997          RX    0.00       1       2       3    2003    2004    2005    2006
1998          RY    1.00    0.75    0.50    0.00    0.00    0.50    0.75    1.00
                    *
                    *

1999          KK     02C   BASIN
2000          KM    BASIN 02C
2001          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2002          KM    L=1.14  Lca=0.42  S=19.3  Kn=0.043  LAG=26.7
2003          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2004          BA   0.242
2005          LG    0.25    0.25    5.85    0.24      40
2006          UI       0      31      93     159     209     312     342     246     182     127
2007          UI      63      44      29       9       9       9       0       0       0       0
2008          UI       0       0       0       0       0       0       0       0       0       0
2009          UI       0       0       0       0       0       0       0       0       0       0
2010          UI       0       0       0       0       0       0       0       0       0       0
                    *
                    *
1                                        HEC-1 INPUT                                                    PAGE 53

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

2011          KK  RET02C  DIVERT
2012          KM  RETAIN 100 YR 24 HR RUNOFF VOLUME
2013          DT  02CRET   34.46       0
2014          DI       0   10000
2015          DQ       0   10000
                    *
                    *

2016          KK     CP2
2017          KM    COMBINE HYDROGRAPHS 2BT2 AND RET02C
2018          HC       2
                    *
                    *

2019          KK     2T1   ROUTE
2020          KM   ROUTE FLOW FROM CP2 TO CP1 WITHIN DRAINAGE CORRIDOR
2021          RS       6    FLOW      -1
2022          RC   0.035   0.035   0.035    3031  0.0040
2023          RX    0.00       2       4       8      42      46      48      50
2024          RY    2.00    1.50    1.00    0.00    0.00    1.00    1.50    2.00
                    *
                    *

2025          KK      01   BASIN
2026          KM    BASIN 01
2027          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2028          KM    L=0.98  Lca=0.26  S=19.4  Kn=0.038  LAG=18.5
2029          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2030          BA   0.299
2031          LG    0.25    0.15    7.58    0.12      55
2032          UI       0      73     251     387     622     440     284     128      69      27
2033          UI      17      17       0       0       0       0       0       0       0       0
2034          UI       0       0       0       0       0       0       0       0       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          KK   RET01  DIVERT
2038          KM   RETAIN 100 YR 24 HR RUNOFF VOLUME
2039          DT   01RET   49.81     0.0
2040          DI       0   10000
2041          DQ       0   10000
```

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                *
                *

          2042  KK     05A   BASIN
          2043  KM    BASIN 05A
          2044  KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2045  KM    L=0.91  Lca=0.39  S=13.2  Kn=0.042  LAG=25.0
          2046  KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          2047  BA   0.188
          2048  LG    0.25    0.15    7.94    0.11      34
          2049  UI       0      25      85     138     186     293     245     180     130      71
1                                        HEC-1 INPUT                                                PAGE 54

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

          2050  UI      43      26      11       8       8       0       0       0       0       0
          2051  UI       0       0       0       0       0       0       0       0       0       0
          2052  UI       0       0       0       0       0       0       0       0       0       0
          2053  UI       0       0       0       0       0       0       0       0       0       0
                *
                *

          2054  KK  RET05A  DIVERT
          2055  KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          2056  DT  05ARET   14.25     0.0
          2057  DI       0   10000
          2058  DQ       0   10000
                *
                *

          2059  KK     06A   BASIN
          2060  KM    BASIN 06A
          2061  KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2062  KM    L=0.79  Lca=0.18  S=21.5  Kn=0.045  LAG=17.2
          2063  KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          2064  BA   0.120
          2065  LG    0.27    0.25    5.85    0.23      25
          2066  UI       0      35     115     185     261     165      95      38      18       7
          2067  UI       7       0       0       0       0       0       0       0       0       0
          2068  UI       0       0       0       0       0       0       0       0       0       0
          2069  UI       0       0       0       0       0       0       0       0       0       0
          2070  UI       0       0       0       0       0       0       0       0       0       0
                *
                *

          2071  KK  RET06A  DIVERT
          2072  KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
          2073  DT  06ARET   10.28       0
          2074  DI       0   10000
          2075  DQ       0   10000
                *
                *

          2076  KK    6AT1   ROUTE
          2077  KM   ROUTE FLOW IN EXCESS OF THE 100-YEAR, 2-HR STORM ALONG THE EVERTON
          2078  KM   TERRACE ROADWAY TO THE DRAINAGE CORRIDOR ALONG THE BOUNDARY BETWEEN
          2079  KM   SUBBASIN 1 AND SUBBASIN 5A
          2080  RS      19    FLOW      -1
          2081  RC   0.030   0.015   0.030    3600  0.0011
          2082  RX    0.00      17      23    28.5    46.5    65.5      71      84
          2083  RY    1.07    0.90    0.90    0.00    1.15    0.00    0.90    1.78
                *
                *

          2084  KK     CP1
          2085  KM    COMBINE HYDROGRAPHS 2T1, RET01, RET05A, AND 6AT1.
          2086  HC       4
                *
                *
1                                        HEC-1 INPUT                                                PAGE 55

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

          2087  KK     1T3   ROUTE
          2088  KM  ROUTE FLOW FROM CP 1 TO CP 3 WITHIN DRAINAGE CORRIDOR.
          2089  RS       3    FLOW      -1
          2090  RC   0.035   0.035   0.035    2548  0.0051
          2091  RX    0.00       2       4       8      42      46      48      50
          2092  RY    2.00    1.50    1.00    0.00    0.00    1.00    1.50    2.00
                *
                *

          2093  KK      03   BASIN
          2094  KM    BASIN 03
          2095  KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2096  KM    L=1.03  Lca=0.23  S=19.4  Kn=0.041  LAG=19.4
          2097  BA   0.254
          2098  LG    0.24    0.15    8.85    0.07      51
          2099  UI       0      55     196     297     495     390     259     138      68      34
          2100  UI      14      14       0       0       0       0       0       0       0       0
          2101  UI       0       0       0       0       0       0       0       0       0       0
          2102  UI       0       0       0       0       0       0       0       0       0       0
          2103  UI       0       0       0       0       0       0       0       0       0       0
                *
                *

          2104  KK   RET03  DIVERT
          2105  KM   RETAIN 100 YR 24 HR RUNOFF VOLUME
          2106  DT   03RET   41.42     0.0
          2107  DI       0   10000
          2108  DQ       0   10000
                *
                *

          2109  KK     CP3
          2110  KM    COMBINE HYDROGRAPHS 1T3 AND RET03.
          2111  HC       2
                *
                *
```

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2112          KK    3T7A   ROUTE
2113          KM   ROUTE FLOW ALONG ROADWAYS FROM CP3 TO CP 7A.
2114          RS       4    FLOW      -1
2115          RC   0.030   0.015   0.030    3854   .0033
2116          RX       0     7.5       8      38      43      73    73.5      81
2117          RY     0.8     0.5       0     0.6     0.6       0     0.5     0.8
              *
              *

2118          KK      08   BASIN
2119          KM    BASIN 08
2120          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2121          KM    L=1.51  Lca=0.82  S=19.2  Kn=0.042  LAG=37.4
2122          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2123          BA   0.579
2124          LG    0.25    0.25    5.85    0.23      36
2125          UI       0       52      85     205     271     327     404     574     617     472
1                                        HEC-1 INPUT                                          PAGE 56

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

2126          UI     389     312     250     168      92      86      52      42      16      16
2127          UI      16      16      16       0       0       0       0       0       0       0
2128          UI       0       0       0       0       0       0       0       0       0       0
2129          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2130          KK   RET08  DIVERT
2131          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2132          DT   08RET   46.56     0.0
2133          DI       0   10000
2134          DQ       0   10000
              *
              *

2135          KK    8T6B   ROUTE
2136          KM   ROUTE FLOW ALONG ROADWAYS FROM CP3 TO CP 7A.
2137          RS       2    FLOW      -1
2138          RC   0.030   0.015   0.030    2604   .0047
2139          RX       0    17.0    23.0    28.5    46.5    65.5    71.0      84
2140          RY     1.1     0.9     0.9     0.0    1.15       0     0.9    1.78
              *
              *

2141          KK     06B   BASIN
2142          KM    BASIN 06B
2143          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2144          KM    L=0.61  Lca=0.34  S=16.4  Kn=0.043  LAG=20.0
2145          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2146          BA   0.103
2147          LG    0.25    0.15    7.58    0.12      32
2148          UI       0      21      75     114     189     162     109      65      30      17
2149          UI       5       5       0       0       0       0       0       0       0       0
2150          UI       0       0       0       0       0       0       0       0       0       0
2151          UI       0       0       0       0       0       0       0       0       0       0
2152          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2153          KK  RET06B  DIVERT
2154          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2155          DT  06BRET    7.32     0.0
2156          DI       0   10000
2157          DQ       0   10000
              *
              *

2158          KK    CP6B
2159          KM    COMBINE HYDROGRAPHS 8T6B AND RET06B.
2160          HC       2
              *
              *
1                                        HEC-1 INPUT                                          PAGE 57

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

2161          KK   6BT7C   ROUTE
2162          KM   ROUTE FLOW ALONG ROADWAYS FROM CP 6B TO CP 7C.
2163          RS       1    FLOW      -1
2164          RC   0.030   0.015   0.030    1001   .0060
2165          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
2166          RY     1.0     0.5     0.0     0.8     0.8       0     0.5     1.0
              *
              *

2167          KK      09   BASIN
2168          KM    BASIN  09
2169          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2170          KM    L=0.69  Lca=0.25  S=24.6  Kn=0.046  LAG=18.5
2171          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2172          BA   0.094
2173          LG    0.26    0.25    5.46    0.32      23
2174          UI       0      23      79     122     196     138      89      40      22       8
2175          UI       5       5       0       0       0       0       0       0       0       0
2176          UI       0       0       0       0       0       0       0       0       0       0
2177          UI       0       0       0       0       0       0       0       0       0       0
2178          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2179          KK   RET09  DIVERT
2180          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME FOR SCHOOLS & MULTI-FAMILY. 100 YR 24 HR RUN
2181          KM   100 YR 24 HR RUNOFF FOR GREAT PARK.
2182          DT   09RET    7.91     0.0
2183          DI       0   10000
2184          DQ       0   10000
              *
```

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                  *
2185              KK     07C   BASIN
2186              KM    BASIN 07C
2187              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2188              KM    L=0.44  Lca=0.17  S=51.1  Kn=0.040  LAG=10.2
2189              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2190              BA   0.113
2191              LG    0.25    0.17    6.76    0.17      33
2192              UI       0     101     318     304     111      28      11       0       0       0
2193              UI       0       0       0       0       0       0       0       0       0       0
2194              UI       0       0       0       0       0       0       0       0       0       0
2195              UI       0       0       0       0       0       0       0       0       0       0
2196              UI       0       0       0       0       0       0       0       0       0       0
                  *
                  *

2197              KK  RET07C  DIVERT
2198              KM   RETAIN A PORTION OF THE 100 YR 24 HR RUNOFF VOLUME
2199              DT  07CRET   15.70     0.0
2200              DI       0   10000
2201              DQ       0   10000
                  *
                  *
1                                        HEC-1 INPUT                                            PAGE 58

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


2202              KK    CP7C
2203              KM    COMBINE HYDROGRAPHS 6BT7C, RET09, AND RET07C.
2204              HC       3
                  *
                  *

2205              KK   DIV7C  DIVERT
2206              KM   PORTION OF RUNOFF IS DIVERTED TO POINT TWENTY-TWO BLEED SYSTEM
2207              KM   THROUGH AN EXISTING 24-INCH BLEED PIPE
2208              DT   DTV7C     0.0    33.1
2209              DI       0     1.0     5.8     9.0     16.7     21.5     22.8        0       0
2210              DQ       0     0.7     4.0     6.2     11.2     14.9     15.8        0       0
                  *
                  *

2211              KK   7CT7B   ROUTE
2212              KM   ROUTE FLOW THROUGH BASINS FROM BASIN C TO BASIN B
2213              RS       1    FLOW      -1
2214              RC   0.035   0.035   0.035     618   .0030
2215              RX       0     1.0    20.0    24.0   198.0     202     222     235
2216              RY     6.0     5.0     1.0     0.0     0.0     1.0     5.0     6.0
                  *
                  *

2217              KK     07B   BASIN
2218              KM    BASIN 07B
2219              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2220              KM    L=0.73  Lca=0.28  S=31.5  Kn=0.043  LAG=17.6
2221              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2222              BA   0.151
2223              LG    0.24    0.15    7.58    0.12      35
2224              UI       0      41     139     220     326     212     128      53      27       9
2225              UI       9       0       0       0       0       0       0       0       0       0
2226              UI       0       0       0       0       0       0       0       0       0       0
2227              UI       0       0       0       0       0       0       0       0       0       0
2228              UI       0       0       0       0       0       0       0       0       0       0
                  *
                  *

2229              KK  RET07B  DIVERT
2230              KM   RETAIN A PORTION OF THE 100 YR 24 HR RUNOFF VOLUME
2231              DT  07BRET   19.43     0.0
2232              DI       0   10000
2233              DQ       0   10000
                  *
                  *

2234              KK    CP7B
2235              KM    COMBINE HYDROGRAPHS 7CT7B AND RET07B.
2236              HC       2
                  *
                  *
1                                        HEC-1 INPUT                                            PAGE 59

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


2237              KK     05B   BASIN
2238              KM    BASIN 05B
2239              KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2240              KM    L=0.65  Lca=0.12  S=21.5  Kn=0.045  LAG=13.7
2241              KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2242              BA   0.156
2243              LG    0.25    0.15    8.85    0.07      29
2244              UI       0      75     226     408     284     135      51      15      12       0
2245              UI       0       0       0       0       0       0       0       0       0       0
2246              UI       0       0       0       0       0       0       0       0       0       0
2247              UI       0       0       0       0       0       0       0       0       0       0
2248              UI       0       0       0       0       0       0       0       0       0       0
                  *
                  *

2249              KK  RET05B  DIVERT
2250              KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2251              DT  05BRET   11.53     0.0
2252              DI       0   10000
2253              DQ       0   10000
                  *
                  *

2254              KK   5BT7A   ROUTE
```

```
2255          KM   ROUTE FLOW ALONG ROADWAYS FROM 5B TO 7A
2256          RS       2    FLOW      -1
2257          RC   0.030   0.015   0.030    2155   .0040
2258          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
2259          RY     1.0     0.5     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2260          KK     07A   BASIN
2261          KM    BASIN 07A
2262          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2263          KM    L=0.84  Lca=0.17  S=10.7  Kn=0.046  LAG=20.2
2264          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2265          BA   0.131
2266          LG    0.25    0.13   10.22    0.06      27
2267          UI       0      25      94     142     235     208     141      87      38      23
2268          UI       7       7       7       0       0       0       0       0       0       0
2269          UI       0       0       0       0       0       0       0       0       0       0
2270          UI       0       0       0       0       0       0       0       0       0       0
2271          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2272          KK  RET07A  DIVERT
2273          KM   RETAIN THE 100 YR 24 HR RUNOFF VOLUME
2274          DT  07ARET   18.66     0.0
2275          DI       0   10000
2276          DQ       0   10000
              *
              *
1                                        HEC-1 INPUT                                                PAGE 60

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


2277          KK    CP7A
2278          KM    COMBINE HYDROGRAPHS 3T7A, CP7B, 5BT7A, AND RET07A.
2279          HC       4
              *
              *

2280          KK   7AT12   ROUTE
2281          KM   ROUTE FLOW ALONG ROADWAYS FROM 7A TO 12
2282          RS       1    FLOW      -1
2283          RC   0.030   0.015   0.030    1540   .0040
2284          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
2285          RY     1.0     0.5     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2286          KK     12A   BASIN
2287          KM    BASIN 12A
2288          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2289          KM    L=0.61  Lca=0.22  S=21.3  Kn=0.043  LAG=16.1
2290          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2291          BA   0.117
2292          LG    0.25    0.15    9.46    0.07      22
2293          UI       0      39     126     218     249     149      70      32      11       8
2294          UI       0       0       0       0       0       0       0       0       0       0
2295          UI       0       0       0       0       0       0       0       0       0       0
2296          UI       0       0       0       0       0       0       0       0       0       0
2297          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2298          KK  RET12A  DIVERT
2299          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2300          DT  12ARET    9.92     0.0
2301          DI       0   10000
2302          DQ       0   10000
              *
              *

2303          KK    CP12
2304          KM    COMBINE HYDROGRAPHS 7AT12 AND RET12A.
2305          HC       2
              *
              *

2306          KK  12T12C   ROUTE
2307          KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM CP12 TO CP12C
2308          RS       2    FLOW      -1
2309          RC   0.030   0.015   0.030    2600   .0014
2310          RX       0    17.5      18      57      73     112   112.5     130
2311          RY     2.0     1.0     0.5     0.0       0     0.5     1.0     2.0
              *
              *
1                                        HEC-1 INPUT                                                PAGE 61

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


2312          KK     12B   BASIN
2313          KM    BASIN 12B
2314          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2315          KM    L=0.57  Lca=0.25  S=12.3  Kn=0.035  LAG=14.9
2316          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2317          BA   0.087
2318          LG    0.25    0.25    5.24    0.30      45
2319          UI       0      35     108     199     171      98      37      15       6       0
2320          UI       0       0       0       0       0       0       0       0       0       0
2321          UI       0       0       0       0       0       0       0       0       0       0
2322          UI       0       0       0       0       0       0       0       0       0       0
2323          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2324          KK  RET12B  DIVERT
2325          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2326          DT  12BRET    7.61     0.0
```

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2327          DI       0   10000
2328          DQ       0   10000
              *
              *

2329          KK  2BT12C   ROUTE
2330          KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM RET12B TO CP12C
2331          RS       4    FLOW      -1
2332          RC   0.030   0.015   0.030    1416   .0014
2333          RX       0    17.5      18      57     73     112   112.5     130
2334          RY     2.0     1.0     0.5     0.0      0     0.5     1.0     2.0
              *
              *

2335          KK     12C   BASIN
2336          KM    BASIN 12C
2337          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2338          KM    L=0.62  Lca=0.26  S=12.9  Kn=0.036  LAG=15.9
2339          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2340          BA   0.075
2341          LG    0.24    0.25    5.05    0.34      46
2342          UI       0      26      82     145     158      94      42      20       6       5
2343          UI       0       0       0       0       0       0       0       0       0       0
2344          UI       0       0       0       0       0       0       0       0       0       0
2345          UI       0       0       0       0       0       0       0       0       0       0
2346          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2347          KK  RET12C  DIVERT
2348          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2349          DT  12CRET    7.12     0.0
2350          DI       0   10000
2351          DQ       0   10000
              *
              *
1                                        HEC-1 INPUT                                                PAGE 62

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

2352          KK      13   BASIN
2353          KM    BASIN 13
2354          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2355          KM    L=0.95  Lca=0.26  S=17.9  Kn=0.044  LAG=21.5
2356          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2357          BA   0.121
2358          LG    0.25    0.25    5.05    0.34      34
2359          UI       0      19      78     117     181     206     139      95      45      27
2360          UI      14       6       6       0       0       0       0       0       0       0
2361          UI       0       0       0       0       0       0       0       0       0       0
2362          UI       0       0       0       0       0       0       0       0       0       0
2363          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2364          KK   RET13  DIVERT
2365          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2366          DT   13RET   13.96     0.0
2367          DI       0   10000
2368          DQ       0   10000
              *
              *

2369          KK   DIV7CRETRIEVE
2370          KM   24-INCH DRAIN PIPE LEAVING RETENTION BASIN 7C
2371          DR   DTV7C
              *
              *

2372          KK   7CT13
2373          KM   ROUTE FLOW FROM BASIN 7C TO CP 13.
2374          KM  THE NSTEP FOR THIS ROUTING WOULD NOT CONVERGE ON A VALUE AS
2375          KM  IT OSCILLATED BETWEEN 3 AND 20.THE ASSUMPTION WAS MADE THAT
2376          KM  THE ROUTING WOULD BE 2 FEET PER SECOND FOR AN NSTEP 5.
2377          RS       5    FLOW      -1
2378          RC   0.030   0.015   0.030    3109   .0050
2379          RX       0    17.5      18      57     73     112   112.5     130
2380          RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2381          KK    CP13
2382          KM    COMBINE HYDROGRAPHS DTV7C AND RET13.
2383          HC       2
              *
              *

2384          KK     11B   BASIN
2385          KM    BASIN 11B
2386          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2387          KM    L=1.22  Lca=0.36  S=23.0  Kn=0.043  LAG=25.0
2388          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2389          BA   0.219
2390          LG    0.27    0.25    4.58    0.46      44
1                                        HEC-1 INPUT                                                PAGE 63

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

2391          UI       0      29      99     161     217     342     286     210     151      82
2392          UI      50      30      13       9       9       0       0       0       0       0
2393          UI       0       0       0       0       0       0       0       0       0       0
2394          UI       0       0       0       0       0       0       0       0       0       0
2395          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2396          KK  RET11B  DIVERT
2397          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2398          DT  11BRET   20.01     0.0
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2399          DI       0   10000
2400          DQ       0   10000
              *
              *

2401          KK  11BT13
2402          KM   ROUTE FLOW FROM BASIN 7C TO CP 13.
2403          RS       4    FLOW      -1
2404          RC   0.030   0.015   0.030    1262   .0050
2405          RX       0    17.5      18      57      73     112   112.5     130
2406          RY     1.0     0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2407          KK   CP12C
2408          KM    COMBINE HYDROGRAPHS 12T12C, 2BT12C, RET12C, CP13, AND 11BT13.
2409          HC       5
              *
              *

2410          KK   13T75   ROUTE
2411          KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM CP12C TO CP75.
2412          RS       1    FLOW      -1
2413          RC   0.030   0.015   0.030    1230   .0016
2414          RX       0    17.5      18      57      73     112   112.5     130
2415          RY     2.0     1.0     0.5     0.0       0     0.5     1.0     2.0
              *
              *

2416          KK      14   BASIN
2417          KM    BASIN 14
2418          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2419          KM    L=0.46  Lca=0.20  S=17.4  Kn=0.031  LAG=10.5
2420          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2421          BA   0.117
2422          LG    0.22    0.25    4.96    0.37      69
2423          UI       0      99     307     326     126      35      12       0       0       0
2424          UI       0       0       0       0       0       0       0       0       0       0
2425          UI       0       0       0       0       0       0       0       0       0       0
2426          UI       0       0       0       0       0       0       0       0       0       0
2427          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                        HEC-1 INPUT                                          PAGE 64

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


2428          KK   RET14  DIVERT
2429          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2430          DT   14RET   12.25     0.0
2431          DI       0   10000
2432          DQ       0   10000
              *
              *

2433          KK     11A   BASIN
2434          KM    BASIN 11A
2435          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2436          KM    L=1.21  Lca=0.48  S=19.8  Kn=0.043  LAG=28.6
2437          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2438          BA   0.078
2439          LG    0.24    0.25    4.03    0.67      54
2440          UI       0       9      25      46      59      80     112      83      64      48
2441          UI      31      16      12       8       3       3       3       3       0       0
2442          UI       0       0       0       0       0       0       0       0       0       0
2443          UI       0       0       0       0       0       0       0       0       0       0
2444          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2445          KK  RET11A  DIVERT
2446          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2447          DT  11ARET    8.03     0.0
2448          DI       0   10000
2449          DQ       0   10000
              *
              *

2450          KK  11AT75
2451          KM   ROUTE FLOW FROM BASIN 11A TO CP 75.
2452          RS       5    FLOW      -1
2453          RC   0.030   0.015   0.030    1855   .0051
2454          RX       0    17.5      18      57      73     112   112.5     130
2455          RY     1.0     0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2456          KK      10   BASIN
2457          KM    BASIN 10
2458          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2459          KM    L=1.11  Lca=0.56  S=18.9  Kn=0.042  LAG=28.9
2460          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2461          BA   0.228
2462          LG    0.24    0.17    6.76    0.16      42
2463          UI       0      27      71     131     168     228     324     246     189     143
2464          UI      96      47      37      25       8       8       8       8       0       0
2465          UI       0       0       0       0       0       0       0       0       0       0
2466          UI       0       0       0       0       0       0       0       0       0       0
2467          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                        HEC-1 INPUT                                          PAGE 65

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


2468          KK   RET10  DIVERT
2469          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
2470          DT   10RET   17.15     0.0
2471          DI       0   10000
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2472          DQ       0   10000
              *
              *

2473          KK   10T75
2474          KM   ROUTE FLOW FROM BASIN 10 TO CP 75.
2475          RS       7    FLOW      -1
2476          RC   0.030   0.015   0.030    6300   .0060
2477          RX       0    17.5      18      57      73     112   112.5     130
2478          RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

2479          KK    CP75
2480          KM    COMBINE HYDROGRAPHS 13T75, RET14, 11AT75, 10T75, AND 10B75.
2481          KO       2
2482          HC       5
              * ************************************************************************
              *
              *
              *
              *

2483          KK   75TPC
2484          KM  ROUTE 75 THROUGH POWERLINE FLOODWAY TO AIR FORCE CHANNEL
2485          RS       1    FLOW      -1
2486          RC     .03    .013     .03    3900   .0041
2487          RX       0    1005    1023  1030.5  1036.5    1044    1062    2067
2488          RY       6       5       5       0       0       5       5       6
              *
              *

2489          KK     77A
2490          KM  BASIN 77A
2491          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2492          KM  L=      2.9  Lca=      1.5   S=   31.1  Kn= .092  LAG= 119.0
2493          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2494          BA    1.74
2495          LG     .35     .36    5.00     .27     .00
2496          UI     49.     49.     49.     49.     49.    108.    162.    185.    205.    230.
2497          UI    244.    264.    278.    293.    311.    333.    358.    380.    406.    462.
2498          UI    537.    584.    659.    601.    541.    496.    461.    430.    407.    385.
2499          UI    362.    334.    311.    293.    273.    252.    238.    226.    189.    161.
2500          UI    141.    104.     87.     87.     83.     81.     81.     73.     49.     49.
2501          UI     49.     49.     49.     22.     15.     15.     15.     15.     15.     15.
2502          UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
2503          UI     15.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2504          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                        PAGE 66

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


2505          KK   77ATB   ROUTE
2506          KM  ROUTE BASIN 77A THROUGH THE KEIGHLEY PLACE SUBDIVISION FROM MERIDIAN ROAD TO
2507          KM  TO MOUNTAIN ROAD.
2508          RS       1    FLOW      -1
2509          RC   0.045   0.040   0.045    3000  0.0050    0.00
2510          RX    0.00    5.00   10.00   37.00   47.00   74.00   79.00   84.00
2511          RY    5.50    5.00    4.50    0.00    0.00    4.50    5.00    5.50
              *
              *

2512          KK     77B   BASIN
2513          KM  BASIN 77B
2514          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2515          KM  L=0.56  Lca=0.26  S=28.6  Kn=0.047  LAG=17.2
2516          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2517          BA   0.349
2518          LG    0.19    0.25    5.40    0.30      18
2519          UI     100     337     536     757     486     273     113      54      20      21
2520          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2521          KK  RET77B  DIVERT
2522          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
2523          DT  77BRET   16.44     0.0
2524          DI       0   10000
2525          DQ       0   10000
              *
              *

2526          KK   CP77B COMBINE
2527          KM  COMBINE HYDROGRAPHS 77ATB AND 77B.
2528          HC       2
              *
              *

2529          KK   77BTC   ROUTE
2530          KM  ROUTE FLOW THROUGH THE MOUNTAIN HORIZONS (SOUTH) DEVELOPEMENT FROM MOUNTAIN
2531          KM  ROAD TO SIGNAL BUTTE ROAD.
2532          RS       3    FLOW      -1
2533          RC   0.045   0.040   0.045    4750  0.0042    0.00
2534          RX    0.00    5.00   10.00   20.00   85.00  105.00  110.00  115.00
2535          RY    5.00    4.00    3.00    0.00    0.00    3.00    4.00    5.00
              *
              * ************************************************************************
              *

2536          KK     77C   BASIN
2537          KM  BASIN 77C
2538          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2539          KM  L=0.76  Lca=0.51  S=23.7  Kn=0.045  LAG=24.8
2540          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2541          BA   0.279
2542          LG    0.25    0.25    6.00    0.22      31
1                                        HEC-1 INPUT                                        PAGE 67
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2543          UI       0      38     129     208     281     442     362     265     189     100
2544          UI      62      38      14      12      12       0       0       0       0       0
2545          UI       0       0       0       0       0       0       0       0       0       0
2546          UI       0       0       0       0       0       0       0       0       0       0
2547          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2548          KK  RET77C  DIVERT
2549          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
2550          DT  77CRET    18.8     0.0
2551          DI       0   10000
2552          DQ       0   10000
              *
              *

2553          KK    C77C COMBINE
2554          KM  COMBINE HYDROGRAPHS 77BTC AND 77C
2555          HC       2
              *
              * ************************************************************************
              *

2556          KK  77CT78   ROUTE
2557          KM  ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN ENGINEERED
2558          KM  CHANNEL FROM RAY ROAD TO WILLIAMS FIELD ROAD.
2559          RS       4    FLOW      -1
2560          RC   0.032   0.032   0.032    4435  0.0020    0.00
2561          RX    0.00    5.00   10.00   24.00  124.00  138.00  143.00  148.00
2562          RY    4.50    4.00    3.50    0.00    0.00    3.50    4.00    4.50
              *
              *

2563          KK     78A
2564          KM  BASIN 78A
2565          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2566          KM  L=      3.3  Lca=       1.3   S=   30.2  Kn= .090  LAG= 118.0
2567          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2568          BA    1.88
2569          LG     .35     .36    5.00     .27     .00
2570          UI     54.     54.     54.     54.     54.    124.    176.    203.    227.    252.
2571          UI    268.    290.    305.    322.    342.    366.    396.    417.    451.    515.
2572          UI    612.    641.    716.    643.    579.    531.    494.    464.    437.    417.
2573          UI    385.    356.    334.    315.    290.    270.    255.    233.    206.    159.
2574          UI    153.     95.     95.     95.     88.     88.     88.     65.     54.     54.
2575          UI     54.     54.     45.     16.     16.     16.     16.     16.     16.     16.
2576          UI     16.     16.     16.     16.     16.     16.     16.     16.     16.     16.
2577          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2578          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                                PAGE 68

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

2579          KK   78ATB   ROUTE
2580          KM  ROUTE FLOW FROM 78A TO 78B VIA WASH CROSSING COUNTY LINE
2581          RS       7    FLOW      -1
2582          RC   0.045   0.040   0.045    3500  0.0042    0.00
2583          RX    0.00  500.00  980.00 1003.00 1007.00 1031.00 1511.00 2011.00
2584          RY    4.50    3.50    3.00    0.00    0.00    3.00    3.50    4.50
              *
              *

2585          KK     78B   BASIN
2586          KM  BASIN 78B
2587          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2588          KM  L=0.60  Lca=0.40  S=31.7  Kn=0.050  LAG=21.7
2589          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2590          BA   0.396
2591          LG    0.30    0.17    6.80    0.15      15
2592          UI      61     254     371     576     682     457     315     156      90      48
2593          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.
              *

2594          KK    C78B COMBINE
2595          KM  COMBINE HYDROGRAPHS 78ATB AND 78B
2596          HC       2
              *
              *

2597          KK   78BTC   ROUTE
2598          KM  ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
2599          KM  WESTERN EDGE OF 78C.
2600          RS       3    FLOW      -1
2601          RC   0.035   0.022   0.035    4500  0.0033    0.00
2602          RX    0.00  100.00  110.00  115.00  120.00  125.00  130.00  135.00
2603          RY    5.00    4.00    3.50    0.00    0.00    3.50    8.00    9.00
              *
              *

2604          KK     78C   BASIN
2605          KM  BASIN 78C
2606          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2607          KM  L=0.50  Lca=0.30  S=31.8  Kn=0.044  LAG=16.0
2608          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2609          BA   0.288
2610          LG    0.26    0.16    7.58    0.11      24
2611          UI       0      99     313     547     610     364     167      77      25      19
2612          UI       0       0       0       0       0       0       0       0       0       0
2613          UI       0       0       0       0       0       0       0       0       0       0
2614          UI       0       0       0       0       0       0       0       0       0       0
2615          UI       0       0       0       0       0       0       0       0       0       0
```

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                *
                *
1                                       HEC-1 INPUT                                                     PAGE 69

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


          2616          KK  RET78C  DIVERT
          2617          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
          2618          DT  78CRET     1.6     0.0
          2619          DI       0   10000
          2620          DQ       0   10000
                        *
                        *

          2621          KK    C78C COMBINE
          2622          KM  COMBINE HYDROGRAPHS 78BTC AND 78C.
          2623          HC       2
                        *
                        *

          2624          KK   C78C2 COMBINE
          2625          KM  COMBINE HYDROGRAPHS 77CT78 AND C78C.
                        * KO     2
          2626          HC       2
                        *
                        *

          2627          KK  78CT79   ROUTE
          2628          KM  ROUTE 78C TO 79A FROM SIGNAL BUTTE ROAD TO THE PROPERTY BOUNDARY APPROXIMATEL
          2629          KM  1/4 MILE TO THE WEST OF SIGNAL BUTTE ROAD VIA ENGINEERED CHANNEL.
          2630          RS       2    FLOW     -1
          2631          RC   0.032   0.032   0.032    4215  0.0033    0.00
          2632          RX    0.00    5.00   10.00   26.00   81.00   97.00  102.00  107.00
          2633          RY    5.00    4.50    4.00    0.00    0.00    4.00    4.50    5.00
                        *
                        * ********************************************************************************
                        *

          2634          KK      20   BASIN
          2635          KM    BASIN 20
          2636          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2637          KM    L=1.23  Lca=0.41  S=14.6  Kn=0.044  LAG=29.4
          2638          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          2639          BA   0.270
          2640          LG    0.24    0.15    7.94    0.11      33
          2641          UI       0      31      81     150     193     258     377     296     228     173
          2642          UI     121      62      47      31      13       9       9       0       0       0
          2643          UI       0       0       0       0       0       0       0       0       0       0
          2644          UI       0       0       0       0       0       0       0       0       0       0
          2645          UI       0       0       0       0       0       0       0       0       0       0
                        *
                        *

          2646          KK   RET20  DIVERT
          2647          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          2648          DT   20RET   25.76     0.0
          2649          DI       0   10000
          2650          DQ       0   10000
                        *
                        *
1                                       HEC-1 INPUT                                                     PAGE 70

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


          2651          KK   CP22B COMBINE
          2652          KM  COMBINE HYDROGRAPHS 78CT79 AND RET20
                        * KO     2
          2653          HC       2
                        *
                        *

          2654          KK      16   BASIN
          2655          KM    BASIN 16
          2656          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2657          KM    L=0.61  Lca=0.24  S=24.6  Kn=0.045  LAG=17.0
          2658          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          2659          BA   0.099
          2660          LG    0.25    0.17    6.76    0.16      31
          2661          UI       0      29      97     159     215     135      75      31      14       6
          2662          UI       6       0       0       0       0       0       0       0       0       0
          2663          UI       0       0       0       0       0       0       0       0       0       0
          2664          UI       0       0       0       0       0       0       0       0       0       0
          2665          UI       0       0       0       0       0       0       0       0       0       0
                        *
                        *

          2666          KK   RET16  DIVERT
          2667          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
          2668          DT   16RET    7.60     0.0
          2669          DI       0   10000
          2670          DQ       0   10000
                        *
                        *

          2671          KK      18   BASIN
          2672          KM    BASIN 18
          2673          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          2674          KM    L=1.07  Lca=0.39  S=14.0  Kn=0.045  LAG=28.2
          2675          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          2676          BA   0.320
          2677          LG    0.25    0.25    6.00    0.23      27
          2678          UI       0      38     106     192     248     348     457     339     259     194
          2679          UI     114      65      46      28      12      12      12       0       0       0
          2680          UI       0       0       0       0       0       0       0       0       0       0
          2681          UI       0       0       0       0       0       0       0       0       0       0
          2682          UI       0       0       0       0       0       0       0       0       0       0
                        *
                        *
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2683          KK   RET18  DIVERT
2684          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
2685          DT   18RET   24.70     0.0
2686          DI       0   10000
2687          DQ       0   10000
              *
              *
1                                      HEC-1 INPUT                                                PAGE 71

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


2688          KK   18T19   ROUTE
2689          KM  ROUTE FLOW FROM BASIN 18 TO BASIN 19
2690          RS       1    FLOW     -1
2691          RC   0.030   0.015   0.030    1040   .0040
2692          RX       0     7.5       8      38      43      73    73.5      81
2693          RY     0.8     0.5       0     0.6     0.6       0     0.5     0.8
              *
              *

2694          KK   CP19A COMBINE
2695          KM  COMBINE HYDROGRAPHS RET16 AND 18T19
              * KO     2
2696          HC       2
              *
              *

2697          KK      19   BASIN
2698          KM    BASIN 19
2699          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2700          KM    L=0.62  Lca=0.24  S=16.1  Kn=0.043  LAG=17.7
2701          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2702          BA   0.138
2703          LG    0.24    0.15    8.36    0.08      39
2704          UI       0      37     125     198     297     195     119      49      26       8
2705          UI       8       0       0       0       0       0       0       0       0       0
2706          UI       0       0       0       0       0       0       0       0       0       0
2707          UI       0       0       0       0       0       0       0       0       0       0
2708          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2709          KK   RET19  DIVERT
2710          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO     2
2711          DT   19RET    11.3     0.0
2712          DI       0   10000
2713          DQ       0   10000
              *
              *

2714          KK   CP19B COMBINE
2715          KM  COMBINE HYDROGRAPHS CP19A AND RET19.
2716          HC       2
              *
              *

2717          KK      17   BASIN
2718          KM    BASIN 17
2719          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2720          KM    L=0.92  Lca=0.47  S=19.6  Kn=0.042  LAG=25.0
2721          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2722          BA   0.141
2723          LG    0.25    0.25    4.08    0.55      33
2724          UI       0      19      64     104     139     220     184     135      97      53
1                                      HEC-1 INPUT                                                PAGE 72

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

2725          UI      32      19       8       6       6       0       0       0       0       0
2726          UI       0       0       0       0       0       0       0       0       0       0
2727          UI       0       0       0       0       0       0       0       0       0       0
2728          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2729          KK   RET17  DIVERT
2730          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO     2
2731          DT   17RET   12.74     0.0
2732          DI       0   10000
2733          DQ       0   10000
              *
              * ************************************************************************
              *

2734          KK     79A   BASIN
2735          KM  BASIN 79A
2736          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2737          KM  L=1.43  Lca=0.82  S=14.7  Kn=0.048  LAG=44.1
2738          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2739          BA   0.998
2740          LG    0.23    0.15    7.58    0.12      48
2741          UI       0      76      76     260     349     423     494     593     791     960
2742          UI     762     637     536     446     370     268     161     130     110      76
2743          UI      61      23      23      23      23      23      23       0       0       0
2744          UI       0       0       0       0       0       0       0       0       0       0
2745          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

2746          KK  RET79A  DIVERT
2747          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO     2
2748          DT   79RET    54.0     0.0
2749          DI       0   10000
2750          DQ       0   10000
              *
```

```
                *
2751            KK  CP79A1 COMBINE
2752            KM  COMBINE HYDROGRAPHS RET17, 79A, CP22B, AND CP19B.
                * KO     2
2753            HC       4
                *
                *

2754            KK     78F
2755            KM  BASIN 78F
2756            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2757            KM  L=      3.7  Lca=      2.1   S=   29.8  Kn= .090  LAG= 147.0
2758            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2759            BA    4.19
2760            LG     .35     .36    5.00     .27     .00
1                                       HEC-1 INPUT                                                     PAGE 73

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

2761            UI     96.     96.     96.     96.     96.     96.    148.    315.    325.    368.
2762            UI    399.    442.    468.    495.    521.    541.    566.    595.    626.    663.
2763            UI    706.    737.    774.    845.    936.   1085.   1119.   1276.   1239.   1127.
2764            UI   1033.    968.    907.    862.    820.    782.    751.    712.    667.    629.
2765            UI    597.    570.    541.    502.    472.    454.    436.    368.    339.    276.
2766            UI    276.    174.    170.    170.    168.    158.    158.    158.    156.     96.
2767            UI     96.     96.     96.     96.     96.     79.     29.     29.     29.     29.
2768            UI     29.     29.     29.     29.     29.     29.     29.     29.     29.     29.
2769            UI     29.     29.     29.     29.     29.     29.     29.      0.      0.      0.
2770            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

2771            KK    82A1
2772            KM  BASIN 82A1
2773            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2774            KM  L=      3.6  Lca=       .9   S=   33.9  Kn= .090  LAG= 103.0
2775            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2776            BA    3.12
2777            LG     .35     .36    5.00     .27     .00
2778            UI    102.    102.    102.    102.    163.    335.    381.    436.    485.    526.
2779            UI    564.    599.    644.    693.    757.    801.    901.   1048.   1222.   1356.
2780            UI   1223.   1084.    987.    913.    852.    800.    742.    675.    629.    589.
2781            UI    529.    494.    459.    391.    304.    266.    180.    180.    173.    167.
2782            UI    167.    123.    102.    102.    102.    102.     36.     31.     31.     31.
2783            UI     31.     31.     31.     31.     31.     31.     31.     31.     31.     31.
2784            UI     31.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2785            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

2786            KK   C82A1
2787            KM  COMBINE FLOWS FROM SUBBASINS 78F AND 82A1 NORTH OF PECOS ROAD AT
2788            KM  NEW DETENTION BASIN
2789            HC       2
                *
                *

2790            KK  DB82A1
2791            KM  PECOS NORTH BASIN
2792            KM  NEW DETENTION BASIN LOCATED EAST OF MERIDIAN ROAD & 660' NORTH OF PECOS RD.
2793            KM  WITH 1-42" RCP OUTLET & 86' SPILLWAY AT ELEV=44
                * KO     2       2
2794            RS       1    STOR       0
2795            SV       0       8      34      73     113     153     195     237     280     346
2796            SE      36      37      38      39      40      41      42      43      44    46.1
2797            SL    33.5     9.6     .62      .5
2798            SS      44     195       3     1.5
                *
                *
1                                       HEC-1 INPUT                                                     PAGE 74

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


2799            KK    PS-9
2800            KM  REACH PS-9
2801            KM  OUTFLOW CHANNEL FROM NEW DETENTION BASIN 82A TO MAIN CHANNEL @ PECOS
2802            RS       1    FLOW      -1
2803            RC    .025    .025    .025     500   .0005
2804            RX       0       8      16      42      46      72      80      88
2805            RY     4.1     4.2     4.3       0       0     4.3     4.2     4.1
                *
                *

2806            KK    CAP2
2807            KM  INFLOW FROM EAST OF THE CAP THROUGH 1 - 36" PIPE OVERCHUTE
2808            KM  STATION #536+00 SALT-GILA AQUEDUCT REACH 2
2809            KM  QI CARDS BASED ON OVERCHUTE CAPACITY OF 64 CFS
2810            IN      60
2811            BA     .01
2812            QI       0      20      64      64      64      64      64      64      64      64
2813            QI      64      64      64      64      64      64      64      64      64      64
2814            QI      64      64      64      64      64
                *
                *

2815            KK   RCAP2
2816            KM  ROUTE CAP2 THROUGH 82A2 VIA WASH TO SUBBASIN 82A2
2817            IN      15
2818            RS      11    FLOW      -1
2819            RC    .045     .04    .045   24000     .05
2820            RX       0     500    1000    1010    1020    1030    1530    2030
2821            RY       8       5       3       0       0       3       5       8
                *
                *

2822            KK    82A2
2823            KM  BASIN 82A2
2824            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
2825          KM  L=      4.6  Lca=      2.9   S=   27.2  Kn= .089  LAG= 183.0
2826          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2827          BA    4.13
2828          LG     .35     .36    5.00     .27    1.00
2829          UI     76.     76.     76.     76.     76.     76.     76.     76.    177.    249.
2830          UI    250.    291.    291.    339.    349.    371.    381.    406.    420.    430.
2831          UI    448.    466.    483.    503.    529.    561.    578.    596.    631.    680.
2832          UI    743.    805.    911.    923.   1027.    979.    901.    845.    794.    751.
2833          UI    717.    686.    659.    635.    613.    594.    570.    540.    514.    487.
2834          UI    470.    455.    437.    407.    393.    372.    362.    349.    315.    291.
2835          UI    263.    218.    218.    179.    134.    134.    134.    134.    128.    125.
2836          UI    125.    125.    125.     96.     76.     76.     76.     76.     76.     76.
2837          UI     76.     67.     23.     23.     23.     23.     23.     23.     23.     23.
2838          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.     23.
2839          UI     23.     23.     23.     23.     23.     23.     23.     23.     23.      0.
2840          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2841          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                        PAGE 75

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

2842          KK  CP82A2
2843          KM  COMBINE FLOW FROM ROUTED CAP2 AND SUBBASIN 82A2
2844          HC       2
              *
              *

2845          KK    82A4
2846          KM  BASIN 82A4
2847          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2848          KM  L=      3.5  Lca=      1.5   S=   29.1  Kn= .090  LAG= 128.0
2849          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2850          BA    2.13
2851          LG     .35     .36    5.00     .27     .00
2852          UI     56.     56.     56.     56.     56.     70.    184.    193.    214.    248.
2853          UI    265.    281.    302.    316.    332.    352.    374.    401.    424.    447.
2854          UI    494.    557.    650.    691.    742.    667.    606.    560.    523.    490.
2855          UI    466.    443.    419.    389.    364.    343.    325.    299.    281.    267.
2856          UI    251.    214.    182.    161.    126.     99.     99.     97.     92.     92.
2857          UI     92.     69.     56.     56.     56.     56.     56.     27.     17.     17.
2858          UI     17.     17.     17.     17.     17.     17.     17.     17.     17.     17.
2859          UI     17.     17.     17.     17.     17.     17.      0.      0.      0.      0.
2860          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2861          KK  82A4T3
2862          KM  REACH MN-2
2863          KM  ROUTE FLOW FROM SUBBASIN 82A4 TO DETENTION BASIN 82A3
2864          RS       2    FLOW      -1
2865          RC    .025    .025    .025    1050   .0005
2866          RX       0       8      16      47     107     138     146     154
2867          RY     5.0     5.1     5.2       0       0     5.2     5.1     5.0
              *
              *

2868          KK    82A3
2869          KM  BASIN 82A3
2870          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2871          KM  L=      3.6  Lca=      2.0   S=   28.3  Kn= .090  LAG= 145.0
2872          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2873          BA    2.02
2874          LG     .35     .36    5.00     .27     .00
2875          UI     47.     47.     47.     47.     47.     47.     82.    154.    162.    180.
2876          UI    200.    218.    230.    246.    257.    268.    280.    294.    310.    330.
2877          UI    351.    365.    387.    425.    477.    553.    566.    633.    583.    529.
2878          UI    492.    460.    434.    410.    392.    376.    361.    336.    316.    299.
2879          UI    284.    271.    250.    237.    228.    216.    190.    180.    136.    135.
2880          UI    101.     83.     83.     83.     78.     77.     77.     77.     52.     47.
2881          UI     47.     47.     47.     47.     42.     14.     14.     14.     14.     14.
2882          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
2883          UI     14.     14.     14.     14.     14.     14.      0.      0.      0.      0.
2884          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                        PAGE 76

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

2885          KK  CP82A3
2886          KM  COMBINE FLOW FROM SUBBASIN 82A4 AND SUBBASIN 82A3 BEFORE DETENTION BASIN
2887          HC       2
              *
              *

2888          KK  CP82A5
2889          KM  COMBINE FLOWS FROM CAP OVERCHUTE AND SUBBASIN 82A
2890          HC       2
              *
              *

2891          KK   DB82B
2892          KM  PECOS SOUTH BASIN
2893          KM  NEW DETENTION BASIN LOCATED EAST OF MERIDIAN ROAD & 660' SOUTH OF PECOS RD.
2894          KM  WITH 1-66" RCP OUTLET & 80' SPILLWAY AT ELEV 41
              * KO     2       2
2895          RS       1    STOR       0
2896          SV       0     3.5     9.6    25.7    62.7   110.5   158.7   207.5   257.3     320
2897          SE    31.5      33      34      35      36      37      38      39      40    42.1
2898          SL      33    23.7     .62      .5
2899          SS      41      80       3     1.5
              *
              *

2900          KK    MN-1
2901          KM  REACH MN-1  plus culvert PSC-7
```

```
2902          KM  ROUTE FLOW FROM NEW DETENTION BASIN 82B TO MAIN LINE CHANNEL @ PECOS
2903          RS       2    FLOW      -1
2904          RC    .025    .025    .025    1030   .0005
2905          RX       0       8      16      47      55      87      95     103
2906          RY     5.1     5.2     5.3       0       0     5.3     5.2     5.1
              *
              *

2907          KK  CP82A6
2908          KM  COMBINE FLOWS AFTER DETENTION BASINS.
2909          HC       2
              *
              *

2910          KK  82TBOX
2911          KM  REACH PS-8
2912          KM  ROUTE FLOW FROM DETENTION BASIN DB82B TO 1000' FOOT LONG BOX CULVERT (PSC-6).
2913          RS       1    FLOW      -1
2914          RC    .025    .025    .025     750   .0005
2915          RX       0       8      16    47.2      67      98     106     114
2916          RY     5.0     5.1     5.2       0       0     5.2     5.1     5.0
              *
              *
1                                        HEC-1 INPUT                                                PAGE 77

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

2917          KK  BOXCLV
2918          KM  REACH PSC-6
2919          KM  ROUTE FLOW THROUGH BOX CULVERT
2920          RS       1    FLOW      -1
2921          RC    .015    .012    .015    1000   .0020
2922          RX       0       8      16   16.01   28.01   28.02      36      44
2923          RY     4.8     4.9       5       0       0       5     4.9     4.8
              *
              *

2924          KK  BOXT78
2925          KM  REACH PS-5, PS-6, PS-7 plus culverts PSC-5 & PSC-4
2926          KM  ROUTE FLOW FROM 1000' BOX CULVERT TO C78D  (SIGNAL BUTTE ROAD)
2927          RS       3    FLOW      -1
2928          RC    .025    .025    .025    3400   .0005
2929          RX       0       8      16      47      67      98     106     114
2930          RY     5.4     5.3     5.2       0       0     5.2     5.3     5.4
              *
              *

2931          KK     78D
2932          KM  BASIN 78D
2933          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2934          KM  L=      1.2  Lca=       .5   S=   21.7  Kn= .030  LAG=  19.5
2935          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2936          BA     .89
2937          LG     .15     .15    8.00     .11   55.00
2938          UI    189.    678.   1029.   1713.   1367.    909.    496.    240.    123.     47.
2939          UI     47.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2940          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

2941          KK    R78D
2942          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2943          DT    D78D      84
2944          DI       0   10000
2945          DQ       0   10000
              *
              *

2946          KK     82B
2947          KM  BASIN 82B
2948          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2949          KM  L=       .9  Lca=       .4   S=   21.2  Kn= .030  LAG=  17.2
2950          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2951          BA     .92
2952          LG     .15     .25    5.00     .36   55.00
2953          UI    266.    879.   1420.   2004.   1268.    727.    294.    142.     55.     55.
2954          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
2955          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                                PAGE 78

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

2956          KK     R82
2957          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
2958          DT     D82       1
2959          DI       0   10000
2960          DQ       0   10000
              *
              *

2961          KK   DTTRW
2962          KM  DIVERTING 110.7 ACRE-FEET DUE TO ON-SITE RETENTION
2963          KM  VOLUMES WERE DERIVED FROM DRAINAGE REPORT - REFERENCE 7.
2964          DT     TRW   110.7
2965          DI       0   10000
2966          DQ       0   10000
              *
              *

2967          KK    C78D
2968          KM  COMBINE FLOWS FROM 78D, 82B AND ROUTED FLOW 82T78D
2969          KM  @ PECOS ROAD AND SIGNAL BUTTE ROAD.
2970          HC       3
              *
              *
```

```
2971          KK   78DTE
2972          KM  REACH PS-2, PS-3, PS-4 plus culverts PSC-3 AND PSC-2.
2973          KM  ROUTE FLOWS FROM 78D (PECOS RD AND SIGNAL BUTTE RD) TO 78E (PECOS AND CRISMON
2974          RS      11    FLOW      -1
2975          RC    .025   0.025   0.025    5100   .0005
2976          RX       0       8      16    53.2    93.2   130.4   138.4   146.4
2977          RY     6.0     6.1     6.2       0       0     6.3     6.1     6.0
                    *
                    *

2978          KK     78E
2979          KM  BASIN 78E
2980          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2981          KM  L=      1.1  Lca=       .5   S=   17.4  Kn= .087  LAG=  57.4
2982          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2983          BA    1.01
2984          LG     .35     .26    8.80     .06    1.00
2985          UI     59.     59.    108.    212.    271.    313.    351.    402.    460.    565.
2986          UI    741.    698.    577.    502.    447.    382.    335.    289.    241.    166.
2987          UI    104.    100.     97.     60.     59.     45.     18.     18.     18.     18.
2988          UI     18.     18.     18.     18.      0.      0.      0.      0.      0.      0.
2989          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    *
1                                        HEC-1 INPUT                                          PAGE 79

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

2990          KK      83
2991          KM  BASIN 83
2992          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2993          KM  L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
2994          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2995          BA    1.01
2996          LG     .15     .25    5.00     .36   55.00
2997          UI    131.    423.    700.    931.   1454.   1362.    993.    726.    464.    226.
2998          UI    161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
2999          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    *

3000          KK     R83
3001          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3002          DT     D83      83
3003          DI       0   10000
3004          DQ       0   10000
                    *
                    *

3005          KK    C78E
3006          KM  COMBINE FLOWS FROM 78D AND 78E (CRISMON ROAD)
3007          HC       3
                    *
                    *

3008          KK  78ET84
3009          KM  REACH PS-1
3010          KM  ROUTE FLOWS WEST ALONG PECOS IN A PROPOSED CHANNEL
3011          KM  ROUTE FLOWS FROM CRISMON ROAD TO ELLSWORTH ROAD.
3012          RS       4    FLOW      -1
3013          RC    .025   0.025   0.025    4840   .0005
3014          RX       0       8      16    53.2    93.2   130.4   138.4   146.4
3015          RY     6.0     6.1     6.2       0       0     6.2     6.1     6.0
                    *
                    *

3016          KK      84
3017          KM  BASIN 84
3018          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3019          KM  L=      2.0  Lca=       .5   S=   12.5  Kn= .030  LAG=  26.7
3020          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3021          BA     .99
3022          LG     .15     .25    4.70     .40   55.00
3023          UI    125.    380.    651.    855.   1278.   1399.   1008.    747.    520.    258.
3024          UI    182.    120.     38.     38.     38.      0.      0.      0.      0.      0.
3025          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                    *
                    *
1                                        HEC-1 INPUT                                          PAGE 80

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

3026          KK     R84
3027          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3028          DT     D84      85
3029          DI       0   10000
3030          DQ       0   10000
                    *
                    *

3031          KK     C84
3032          KM  COMBINE FLOWS FROM 78E AND 84  AT ELLSWORTH AND PECOS ROAD
3033          KM  CHANNEL EAST SIDE OF GATEWAY WILLIAMS FLOWING TO THE NORTH
3034          HC       2
                    *
                    *

3035          KK  84T79B
3036          KM  REACH EH-3B
3037          KM  ROUTE FLOWS FROM THE CORNER OF PECOS AND ELLSWORTH ROADS TO
3038          KM  THE SOUTH OF WILLIAMS FIELD ROAD AND ELLSWORTH ROAD
3039          KM  (THIS IS THE COMBINE POINT FROM BASIN 79B)
3040          RS       1    FLOW      -1
3041          RC    .015    .015    .015    3383   .0010
3042          RX       0       8      16      30      55      69      77      85
3043          RY     6.7     6.8     6.9       0       0     6.9     6.8     6.7
                    *
                    *
```

```
3044          KK     79B
3045          KM  BASIN 79B
3046          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3047          KM  L=      1.4  Lca=       .6   S=    9.0  Kn= .090  LAG=  77.7
3048          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3049          BA    1.00
3050          LG     .35     .25    9.70     .05     .00
3051          UI     43.     43.     43.     85.    150.    179.    207.    232.    250.    275.
3052          UI    306.    335.    388.    479.    557.    515.    444.    396.    360.    331.
3053          UI    295.    267.    240.    216.    192.    155.    123.     76.     76.     71.
3054          UI     71.     48.     43.     43.     36.     13.     13.     13.     13.     13.
3055          UI     13.     13.     13.     13.     13.     13.      0.      0.      0.      0.
3056          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3057          KK   C79B1
3058          KM  FLOWS FROM SOUTH CHANNEL ALONG ELLSWORTH ROAD.
3059          HC       2
              *
              *
1                                        HEC-1 INPUT                                                PAGE 81

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

3060          KK  79BTB2
3061          KM  REACH EH-3A
3062          KM  ROUTE FLOWS FROM THE COMBINE POINT OF SUB-BASIN 79B TO
3063          KM  WILLIAMS FIELD ROAD AND ELLSWORTH ROAD
3064          RS       1    FLOW      -1
3065          RC    .025    .015    .025    5000   .0010
3066          RX       0       8      16      30      55      69      77      85
3067          RY     6.7     6.8     6.9       0       0     6.9     6.8     6.7
              *
              *

3068          KK   C79B2
3069          KM  COMBINE 79A AND ROUTED 79B (WHICH IS HYDROGRAPH C79B1)
3070          HC       2
              *
              *

3071          KK  79TPC2
3072          KM  REACH EH-1, EH-2, plus culvert EHC-1
3073          KM  ROUTE FLOWS THROUGH WILLIAMS-GATEWAY (SUBBASIN 80A) BY WAY OF NEW NORTH
3074          KM  PERIMETER CHANNEL ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD
3075          RS       2    FLOW      -1
3076          RC    .025    .015    .025    4760   .0014
3077          RX       0       8      16      33      61      78      86      94
3078          RY     8.4     8.5     8.4       0       0     8.4     8.5     8.4
              *
              *

3079          KK   CPPWR
3080          KM  COMBINE FLOWS FROM 75 AND 79 IN THE POWERLINE FLOODWAY ALONG RAY ROAD
3081          KM  AT ABOUT 1/2 MILE WEST OF ELLSWORTH ROAD
              * KO      2
3082          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
              * DT PWRDB    1537
              * DI     0     528     544     576     628     704     955    5730
              * DQ     0       0      11      40      89     162     410    5174
              *

3083          KK  PWRT80
3084          KM  REACH PR-3, PR-4, plus culvert PRC-2
3085          KM  ROUTE FLOWS FROM PLF COMBINE TO CATCH POINT AT 80A VIA PLF IMPROVEMENT
3086          RS       1    FLOW      -1
3087          RC    .025    .015    .025    3680   .0014
3088          RX       0       8      16      34      62      79      87      95
3089          RY     8.5     8.6     8.7       0       0     8.7     8.6     8.5
              *
              *
1                                        HEC-1 INPUT                                                PAGE 82

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

3090          KK     80A
3091          KM  BASIN 80A
3092          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3093          KM  L=      3.8  Lca=       2.2   S=   14.2  Kn= .030  LAG=  58.2
3094          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3095          BA    2.64
3096          LG     .15     .15    9.70     .06   55.00
3097          UI    153.    153.    265.    544.    690.    802.    899.   1020.   1171.   1421.
3098          UI   1851.   1871.   1534.   1330.   1185.   1024.    896.    770.    653.    479.
3099          UI    305.    265.    251.    187.    153.    153.     50.     47.     47.     47.
3100          UI     47.     47.     47.     47.      0.      0.      0.      0.      0.      0.
3101          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3102          KK    R80A
3103          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3104          DT    D80A      33
3105          DI       0   10000
3106          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
                *
                *

     3107       KK   CP80A
     3108       KM  COMBINE FLOW IN THE POWERLINE FLOODWAY WITH FLOW COMING FROM SUBBASIN 80A
     3109       KM  THE LOCATION FOR THIS COMBINATION AT THE NW CORNER OF SUBBASIN 80A
                * KO     2
     3110       HC       2
                * HC     3
                *
                *
1                                          HEC-1 INPUT                                                 PAGE 83

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


     3111       KK  PWRSAN
     3112       KM  REACH PR-1, PR-2 plus culvert PRC-1
     3113       KM  ROUTE FLOWS FROM COMBINE POINT AT 80A VIA PLF RE-ALIGNMENT.
     3114       RS       1    FLOW      -1
     3115       RC    .015    .015    .015    3500   .0014
     3116       RX       0       8      16      74     154     212     220     228
     3117       RY     9.5     9.6     9.7       0       0     9.7     9.6     9.5
                *
                *

     3118       KK   CPSAN
     3119       KM  COMBINE FLOWS FROM THE POWERLINE FLOODWAY AND THE PROPOSED SANTAN FREEWAY
     3120       KM  DRAINAGE CHANNEL
                * KO     2
     3121       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
                * DT RAYDB    1200
                * DI     0    1000    1001    1500    4500   14500
                * DQ     0       0       1     500    3500   13500
                *
                *

     3122       KK  PWREMF
     3123       KM  ROUTE FLOW FROM RE-ALIGNED POWERLINE FLOODWAY TO EMF VIA
     3124       KM  NEW CHANNEL ALONG SANTAN FREEWAY ALIGNMENT
     3125       KM  REACH ET-1
     3126       KO                                      21
     3127       RS       3    FLOW      -1
     3128       RC    .025    .025    .025    3850   .0005
     3129       RX       0       8      16      74     154     212     220     228
     3130       RY     9.5     9.6     9.7       0       0     9.7     9.6     9.5
                *
                *

     3131       KK  EMFPOW
     3132       KM  COMBINE FLOW FROM THE POWERLINE FLOODWAY WITH FLOW IN THE EMF
                * KO     2
     3133       HC       2
                *
                *

     3134       KK  POWTWI
     3135       KM  ROUTE EMF FLOW TO WILLIAMS FIELD ROAD VIA THE EMF
     3136       KM  THIS SECTION IS CONCRETE LINED TO PAST POWER ROAD BRIDGE
     3137       RS       2    FLOW      -1
     3138       RC     .03    .012     .03    4750   .0003
     3139       RX       0     500     520     553     693     726     740     742
     3140       RY      14      12      11       0       0      11      11      12
                *
                *
1                                          HEC-1 INPUT                                                 PAGE 84

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


     3141       KK     80B
     3142       KM  BASIN 80B
     3143       KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
     3144       KM  L=      1.5  Lca=       .9   S=   18.4  Kn= .044  LAG=  41.9
     3145       KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
                * KO                                    21
     3146       BA    1.12
     3147       LG     .13     .17    6.80     .18   48.00
     3148       UI     90.    105.    319.    433.    515.    614.    754.   1063.   1032.    814.
     3149       UI    687.    563.    464.    359.    213.    155.    136.     90.     73.     28.
     3150       UI     28.     28.     28.     28.     28.      0.      0.      0.      0.      0.
     3151       UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *
```

```
3152          KK    R80B
3153          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO                                    21
3154          DT    D80B       4
3155          DI       0   10000
3156          DQ       0   10000
              *
              *
              * Subbasin 81B routed to EMFWIL per discussions with the FCDMC as part of the
              * Chandler Heights/Rittenhouse Basin Design Project.         QAZ
              *
              *

3157          KK     81B
3158          KM  BASIN 81B
3159          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3160          KM  L=      1.1  Lca=       .4   S=    6.9  Kn= .033  LAG=  24.7
3161          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3162          BA     .84
3163          LG     .10     .25    4.70     .45   67.00
3164          UI    115.    393.    631.    857.   1343.   1088.    796.    566.    296.    185.
3165          UI    115.     39.     35.     35.      0.      0.      0.      0.      0.      0.
3166          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3167          KK    R81B
3168          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3169          KO       3                              21
3170          DT    D81B      35
3171          DI       0   10000
3172          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
              *
              *
```



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

3173          KK  80B81B
3174          KM  COMBINE FLOWS FROM 80B & 81B AND EXPORT TO ROUTING MODEL
3175          KO                                      21
3176          HC       2
              *
              *

3177          KK  EMFWIL
3178          KM  COMBINE FLOWS INTO THE EMF WEST OF WILLIAMS AFB FROM 80B, 81B, EMF POWERLINE
              * KO     2
3179          HC       2
              *
              *

3180          KK  WILTSP
3181          KM  ROUTE EMF FLOW FROM WILLIAMS FIELD ROAD TO THE SOUTHERN PACIFIC RAILROAD
3182          KM  (AT RITTENHOUSE ROAD)
3183          RS       3    FLOW      -1
3184          RC     .03    .022     .03    5000   .0003
3185          RX       0     500     520     553     693     726     740     742
3186          RY      14      12      11       0       0      11      11      12
              *
              *
              * KKEMFRT1      Hydrograph name changed by Dibble & Associates to avoid two
              * KM            different hydrographs with the same name.
              * KM COMBINE 81A & 81B AND RITTENHOUSE(HYDROGRAPH WILTSP, FROM EMFWIL)
              * HC     2
              *
              *
              * THE NEXT KK BLOCKS COME FROM THE QUEEN CREEK ADMS
              *
              * ***********  UPDATED TO GREEN-AMPT  ***********
              *

3187          KK  SUB258
3188          KM  PINAL COUNTY BASIN.  PARAMETERS BASED ON EXISTING LAND-USE
3189          KM  TO MODEL PINAL COUNTY'S PRE .VS. POST DEVELOPMENT DRAINAGE CRITERIA
3190          KM  BASIN 258
3191          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3192          KM  L=      4.6  Lca=      2.5   S=   24.8  Kn= .062  LAG= 122.0
3193          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3194          BA    3.65
3195          LG     .34     .17    4.70     .42   18.00
3196          UI    110.    110.    110.    110.    110.    217.    232.    299.    386.    574.
3197          UI    583.    717.    579.    644.    772.    918.    802.    927.    927.    927.
3198          UI    927.    927.    927.    927.    834.    772.    772.    772.    866.    865.
3199          UI    583.    579.    583.    650.    605.    458.    421.    421.    381.    331.
3200          UI    315.    309.    352.    309.    211.    211.    190.    178.    178.    159.
3201          UI    136.    136.    136.    125.    101.    101.    101.    101.    101.     74.
3202          UI     63.     63.     63.     63.     63.     63.     63.     63.     29.     14.
3203          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
3204          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
3205          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.     14.
3206          UI     14.     14.     14.     14.     14.     14.     14.     14.     14.      0.
```



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

3207          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
3208          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3209          KK   RO259
3210          KM  ROUTE SUB258 TO CO262
3211          RM      11    1.57    0.20
```

```
                *
                *

3212            KK  SUB260
3213            KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
3214            KM  BASIN 260
3215            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3216            KM  L=      1.0  Lca=       .5   S=   23.2  Kn= .045  LAG=  27.3
3217            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3218            BA     .98
3219            LG     .27     .25    4.80     .36   24.00
3220            UI    121.    355.    623.    813.   1175.   1413.   1018.    764.    555.    284.
3221            UI    199.    121.     55.     37.     37.     37.      0.      0.      0.      0.
3222            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                * KKRETAIN

3223            KK    R260
3224            KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
3225            DT  RETDIV      69
3226            DI       0   10000
3227            DQ       0   10000
                *
                *

3228            KK   CO262
3229            KM  COMBINE SUB260 AND RO259
3230            HC       2
                *
                *

3231            KK   RO263
3232            KM  ROUTE CO262 TO CO266
3233            RM      11    1.56    0.20
                *
                * ***********  UPDATED TO GREEN-AMPT  ***********
                *

3234            KK  SUB264
3235            KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
3236            KM  BASIN 264
3237            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3238            KM  L=      1.0  Lca=       .6   S=   20.0  Kn= .050  LAG=  32.9
3239            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3240            BA    1.00
3241            LG     .25     .25    4.70     .38   31.00
3242            UI    102.    217.    450.    584.    730.   1015.   1235.    921.    734.    572.
1                                       HEC-1 INPUT                                                 PAGE 87

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

3243            UI    426.    228.    171.    115.     82.     31.     31.     31.     31.      0.
3244            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
3245            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

3246            KK    R264
3247            KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
3248            DT  RETDIV      73
3249            DI       0   10000
3250            DQ       0   10000
                *
                *

3251            KK   CO266
3252            KM  COMBINE SUB264 AND RO263
3253            HC       2
                *
                *

3254            KK   RO267
3255            KM  ROUTE CO266 TO CO270
3256            RM      11    3.31    0.20
                *
                *

3257            KK  SUB268
3258            KM  MARICOPA COUNTY BASIN.  PARAMETERS BASED ON FUTURE LAND-USE
3259            KM  BASIN 268
3260            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3261            KM  L=      2.0  Lca=       1.1   S=   13.4  Kn= .046  LAG=  55.1
3262            KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3263            BA     .97
3264            LG     .23     .25    4.65     .39   34.00
3265            UI     59.     59.    122.    219.    281.    324.    365.    422.    489.    637.
3266            UI    762.    634.    536.    474.    408.    355.    301.    255.    185.    113.
3267            UI    102.     97.     63.     59.     45.     18.     18.     18.     18.     18.
3268            UI     18.     18.      0.      0.      0.      0.      0.      0.      0.      0.
3269            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *
                *

3270            KK    R268
3271            KM  100-YR, 2HR RETENTION VOLUME FOR SUBBASIN LOCATED IN MARICOPA COUNTY
3272            DT  RETDIV      68
3273            DI       0   10000
3274            DQ       0   10000
                *
                *
1                                       HEC-1 INPUT                                                 PAGE 88

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


3275            KK   CO270
3276            KM  COMBINE RUNOFF FROM RO267 AND SUB268
3277            HC       2
                *
                *
```

```
3278          KK   RO283
3279          KM  ROUTE CO282 TO CONCENTRATION POINT AT QUEEN CREEK ROAD
3280          RM      11    2.78    0.20
              *
              * THIS IS THE END OF THE QUEEN CREEK ADMS INSERT
              *
              *

3281          KK    88A
3282          KM  BASIN 88A
3283          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3284          KM  L=       .8  Lca=       .2   S=   13.2  Kn= .020  LAG=   9.2
3285          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3286          BA     .50
3287          LG    .10     .25    5.00     .40   80.00
3288          UI    549.   1709.   1208.    323.     71.      0.      0.      0.      0.      0.
3289          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3290          KK    R88A
3291          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3292          DT    D88A      50
3293          DI       0   10000
3294          DQ       0   10000
              *
              *

3295          KK  88AT89
3296          KM  REACH RH-2b,RH-2a,RH-1,EXISTING CHANNEL (FCD 97-34), plus culvert RHC-1
3297          KM  ROUTE 88A TO 89A VIA THE PROPOSED CHANNEL ALONG QUEEN CREEK ROAD
3298          KM  FROM CRISMON ROAD TO ELLSWORTH ROAD
3299          RS       5    FLOW      -1
3300          RC    .025    .025    .025    5135   .0010
3301          RX       0       8      16      45      55      85      93     101
3302          RY     4.7     4.8     4.9       0       0     4.9     4.8     4.7
              *
              *

3303          KK    89A
3304          KM  BASIN 89A
3305          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3306          KM  L=      1.0  Lca=       .6   S=   19.0  Kn= .020  LAG=  13.5
3307          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3308          BA     .50
3309          LG    .10     .25    4.65     .47   80.00
3310          UI    247.    742.   1328.    891.    408.    158.     41.     38.      0.      0.
3311          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                          PAGE 89

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


3312          KK    R89A
3313          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3314          DT    D89A      50
3315          DI       0   10000
3316          DQ       0   10000
              *
              *

3317          KK    C89A
3318          KM  COMBINE FLOWS FROM 88A AND 89A AT QUEEN CREEK ROAD AND ELLSWORTH ROAD
3319          HC       2
              *
              *

3320          KK  89ATRI
3321          KM  ROUTE 89A TO RITTENHOUSE ROAD VIA THE PROPOSED CHANNEL ALONG QUEEN CREEK ROAD
3322          KM  FROM ELLSWORTH ROAD TO RITTENHOUSE ROAD
3323          KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN.
3324          RS       5    FLOW      -1
3325          RC    .025    .025    .025    3145   .0005
3326          RX       0      10      26      39      49      72      78     100
3327          RY    12.2     9.7     5.7       0       0     5.7     9.7    12.2
              *
              *

3328          KK    C283
3329          KM  COMBINE FLOWS FROM QUEEN CREEK ADMS AND EC ADMP AT QUEEN CREEK ROAD AND
3330          KM  RITTENHOUSE ROAD.
              * KO             2
3331          HC       2
              *
              *

3332          KK  283T90
3333          KM  ROUTE FLOWS FROM CONCENTRATION POINT 283 AT QUEEN CREAK ROAD NORTH IN
3334          KM  RITTENHOUSE CHANNEL TO THE HALF MILE STREET BETWEEN QUEEN CREEK ROAD AND
3335          KM  GERMANN ROAD (RYAN STREET)
3336          KM
3337          KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #5).
3338          KM
              * KO             2
3339          RS       3    FLOW      -1
3340          RC    .025    .025    .025    4400   .0005
3341          RX       0      22      28      51      61      83      90     108
3342          RY    11.2     9.7     5.7       0       0     5.7     9.7    11.2
              *
              *

3343          KK    90A
3344          KM  BASIN 90A
3345          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3346          KM  L=       .6  Lca=       .2   S=   24.2  Kn= .038  LAG=  12.8
3347          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3348          BA     .48
```

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

3349          LG     .10     .25    4.60     .49   62.00
3350          UI    269.    789.   1351.    812.    319.    113.     39.      0.      0.      0.
3351          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3352          KK    R90A
3353          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3354          DT    D90A      42
3355          DI       0   10000
3356          DQ       0   10000
              *
              *

3357          KK    C90A
3358          KM  COMBINE FLOWS FLOW C283 AND SUBBASIN 90 AT RYAN STREET ALIGNMENT
              * KO            2
3359          HC       2
              *
              *

3360          KK   90ATB
3361          KM  ROUTE FLOWS FROM SUBBASIN 90A TO 90B VIA CHANNEL
3362          KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #4).
3363          KM
              * KO            2
3364          RS       2    FLOW      -1
3365          RC    .025    .025    .025    4400   .0005
3366          RX       0      22      28      51      61      83      90     108
3367          RY    11.2     9.7     5.7       0       0     5.7     9.7    11.2
              *
              *

3368          KK     87A
3369          KM  BASIN 87A
3370          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3371          KM  L=      1.0  Lca=       .5   S=   24.8  Kn= .020  LAG=  11.7
3372          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3373          BA     .49
3374          LG     .10     .25    5.00     .40   80.00
3375          UI    333.    979.   1448.    720.    221.     66.      0.      0.      0.      0.
3376          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3377          KK    R87A
3378          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3379          DT    D87A      49
3380          DI       0   10000
3381          DQ       0   10000
              *
```



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

3382          KK   87ATB
3383          KM  ROUTE 87A TO 87B VIA SHEET FLOW
3384          RS       6    FLOW      -1
3385          RC    .040    .040    .040    2640   .0056
3386          RX       0     500    1000    1005    1006    1011    1511    2011
3387          RY       1      .5       0       0       0      .5       1     1.5
              *
              *

3388          KK     87B
3389          KM  BASIN 87B
3390          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3391          KM  L=       .9  Lca=       .5   S=   11.6  Kn= .020  LAG=  12.8
3392          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3393          BA     .49
3394          LG     .10     .25    5.00     .40   80.00
3395          UI    275.    809.   1385.    833.    327.    116.     40.      0.      0.      0.
3396          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3397          KK    R87B
3398          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3399          DT    D87B      49
3400          DI       0   10000
3401          DQ       0   10000
              *
              *

3402          KK     C87
3403          KM  COMBINE FLOW FROM SUBBASINS 87A AND 87B
3404          HC       2
              *
              *

3405          KK  87T88B
3406          KM  ROUTE S87 TO S88 VIA GERMANN ROAD
3407          RS       8    FLOW      -1
3408          RC    .045    .025    .045    5280    .002
3409          RX       0    1000    1005    1010    1050    1060    1560    2060
3410          RY      14      13      18      12      11      14    14.5      15
              *
              *

3411          KK     88B
3412          KM  BASIN 88B
3413          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3414          KM  L=       .9  Lca=       .6   S=   21.2  Kn= .020  LAG=  12.8
3415          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3416          BA     .50
```

```
3417          LG     .10     .25    5.00     .40   80.00
3418          UI    279.    819.   1402.    843.    331.    117.     40.      0.      0.      0.
3419          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
1                                        HEC-1 INPUT                                          PAGE 92

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


3420          KK    R88B
3421          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3422          DT    D88B      50
3423          DI       0   10000
3424          DQ       0   10000
              *
              *

3425          KK    C88B
3426          KM  COMBINE FLOWS FROM SUBBASINS 88A AND 88B
3427          HC       2
              *
              *

3428          KK  88T89B
3429          KM  ROUTE S88 (CRISMON ROAD) TO S89B (ELLSWORTH ROAD) VIA GERMANN ROAD
3430          RS      11    FLOW      -1
3431          RC    .045    .025    .045    5280    .004
3432          RX       0    1000    1005    1010    1050    1060    1560    2060
3433          RY      14      13      18      12      11      14    14.5      15
              *
              *

3434          KK     89B
3435          KM  BASIN 89B
3436          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3437          KM  L=       .9  Lca=       .5   S=   23.2  Kn= .020  LAG=  11.7
3438          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3439          BA     .50
3440          LG     .10     .25    4.80     .43   80.00
3441          UI    336.    987.   1460.    726.    223.     67.      0.      0.      0.      0.
3442          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3443          KK    R89B
3444          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3445          DT    D89B      49
3446          DI       0   10000
3447          DQ       0   10000
              *
              *

3448          KK    C89B
3449          KM  COMBINE FLOWS FROM SUBBASINS 89A AND 89B
3450          HC       2
              *
              *
1                                        HEC-1 INPUT                                          PAGE 93

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


3451          KK  89TB90
3452          KM  ROUTE S89B (ELLSWORTH ROAD) TO S90B (AT RITTENHOUSE ROAD) VIA GERMANN ROAD
3453          RS      11    FLOW      -1
3454          RC    .045    .025    .045    8818   .0045
3455          RX       0    1000    1005    1010    1050    1060    1560    2060
3456          RY      14      13      18      12      11      14    14.5      15
              *
              *

3457          KK     90B
3458          KM  BASIN 90B
3459          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3460          KM  L=      2.0  Lca=      1.2   S=   15.3  Kn= .042  LAG=  49.8
3461          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3462          BA     .82
3463          LG     .22     .25    4.65     .38   31.00
3464          UI     56.     56.    147.    232.    283.    327.    379.    444.    588.    709.
3465          UI    583.    490.    427.    359.    306.    259.    187.    117.     96.     91.
3466          UI     56.     56.     28.     17.     17.     17.     17.     17.     17.      0.
3467          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
3468          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3469          KK    R90B
3470          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3471          DT    D90B      23
3472          DI       0   10000
3473          DQ       0   10000
              *
              *

3474          KK     C90
3475          KM  COMBINE FLOWS FROM 90A AND 90B
3476          HC       3
              *
              *

3477          KK   90T91
3478          KM  REVISED 02.24.98 WITH RITTENHOUSE CHANNEL DESIGN (TYPICAL SECTION #3).
3479          KM
3480          RS       5    FLOW      -1
3481          RC    .025    .025    .025    6400   .0005
3482          RX       0      30      36      60      88     108     114     132
3483          RY     9.7     7.5       6       0       0       6     7.5     9.7
              *
              *
```

```
3484          KK      85
3485          KM  BASIN 85
3486          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3487          KM  L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
3488          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3489          BA    1.00
1                                       HEC-1 INPUT                                                    PAGE 94

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

3490          LG     .15     .25    4.35     .51   55.00
3491          UI    131.    422.    698.    929.   1452.   1359.    991.    725.    463.    226.
3492          UI    161.     89.     40.     40.     40.      0.      0.      0.      0.      0.
3493          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3494          KK     R85
3495          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3496          DT     D85      84
3497          DI       0   10000
3498          DQ       0   10000
              *
              *

3499          KK   85T86
3500          KM  ROUTE S85 TO S86 VIA WAFB SOUTH PERIMETER CHANNEL
3501          RS       4    FLOW      -1
3502          RC   0.055   0.035   0.055    5280   .0039
3503          RX       0     500    1000    1013    1028    1041    1541    2041
3504          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              *

3505          KK      86
3506          KM  BASIN 86
3507          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3508          KM  L=      2.0  Lca=       .5   S=   15.0  Kn= .030  LAG=  25.8
3509          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3510          BA    1.00
3511          LG     .15     .25    4.55     .45   55.00
3512          UI    131.    420.    695.    925.   1446.   1354.    987.    722.    461.    225.
3513          UI    160.     89.     40.     40.     40.      0.      0.      0.      0.      0.
3514          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3515          KK     R86
3516          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3517          DT     D86      85
3518          DI       0   10000
3519          DQ       0   10000
              *
              *

3520          KK     C86
3521          KM  COMBINE 85 AND 86 AT PECOS ROAD AND SOSSAMAN ROAD
3522          HC       2
              *
              *
1                                       HEC-1 INPUT                                                    PAGE 95

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

3523          KK   86T91
3524          KM  ROUTE S86 TO S91 VIA WAFB SOUTH PERIMETER CHANNEL. Grassy v=3ft/sec
3525          RS       7    FLOW      -1
3526          RC    0.05   0.035    0.05    5500   .0025
3527          RX       0     500    1000    1013    1028    1041    1541    2041
3528          RY     5.5       5     4.5       0       0     4.5       5     5.5
              *
              *

3529          KK      91
3530          KM  BASIN 91
3531          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3532          KM  L=      1.4  Lca=       .6   S=   18.4  Kn= .030  LAG=  22.7
3533          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3534          BA     .46
3535          LG     .15     .25    4.65     .42   55.00
3536          UI     68.    262.    399.    586.    792.    554.    390.    234.    116.     73.
3537          UI     28.     21.     21.      0.      0.      0.      0.      0.      0.      0.
3538          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

3539          KK   RET91
3540          KM  RETAIN 100YR 2HR VOLUME
3541          DT     D91      38
3542          DI       0   10000
3543          DQ       0   10000
              *
              *

3544          KK     81A
3545          KM  BASIN 81A
3546          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3547          KM  L=      3.3  Lca=       1.9  S=   16.4  Kn= .029  LAG=  49.0
3548          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
3549          BA    1.81
3550          LG     .14     .25    4.70     .41   58.00
3551          UI    125.    125.    341.    523.    642.    737.    863.   1019.   1359.   1576.
3552          UI   1258.   1066.    922.    777.    656.    545.    386.    222.    209.    177.
3553          UI    125.    117.     38.     38.     38.     38.     38.     38.     38.      0.
3554          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
3555          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *
```

```
3556          KK    R81A
3557          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
3558          DT    D81A       5
3559          DI       0   10000
3560          DQ       0   10000
              *
              *
1                                        HEC-1 INPUT                                                    PAGE 96

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

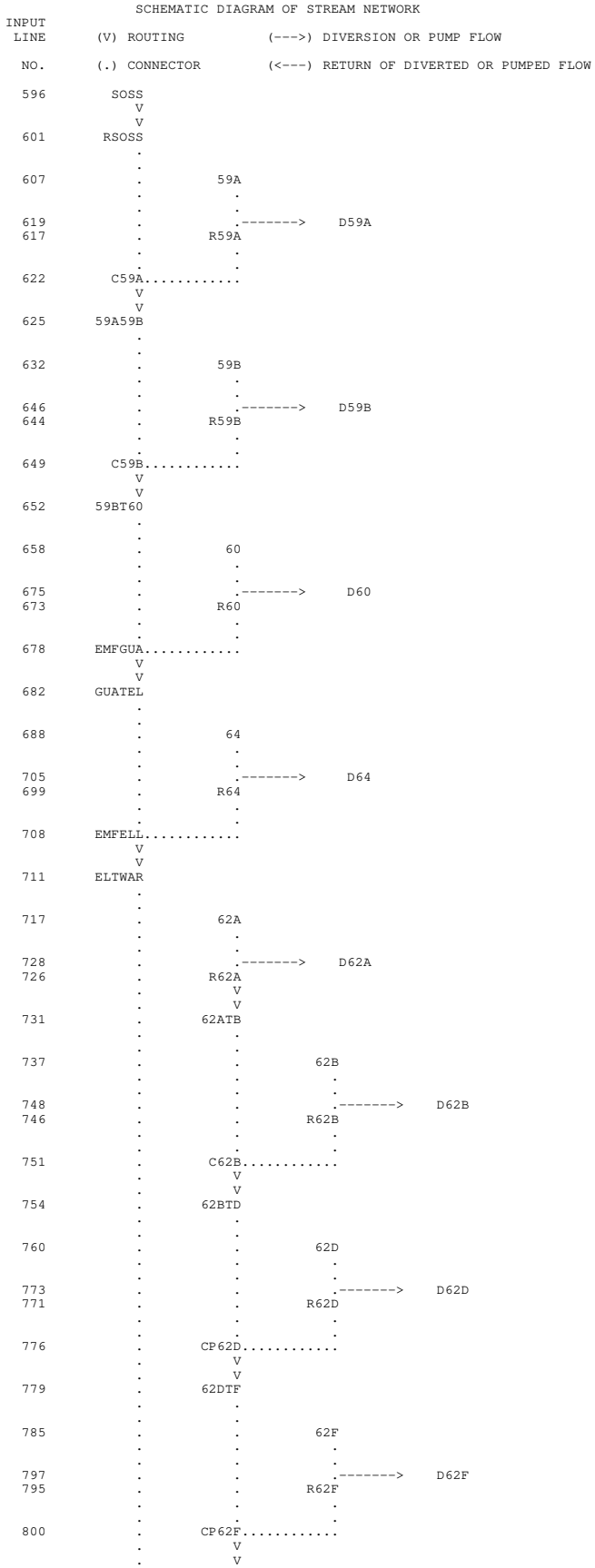

3561          KK    CP91
3562          KM  COMBINE 91, 90, 86 81A AT RITTENHOUSE CHANNEL
3563          HC       4
              *
              *

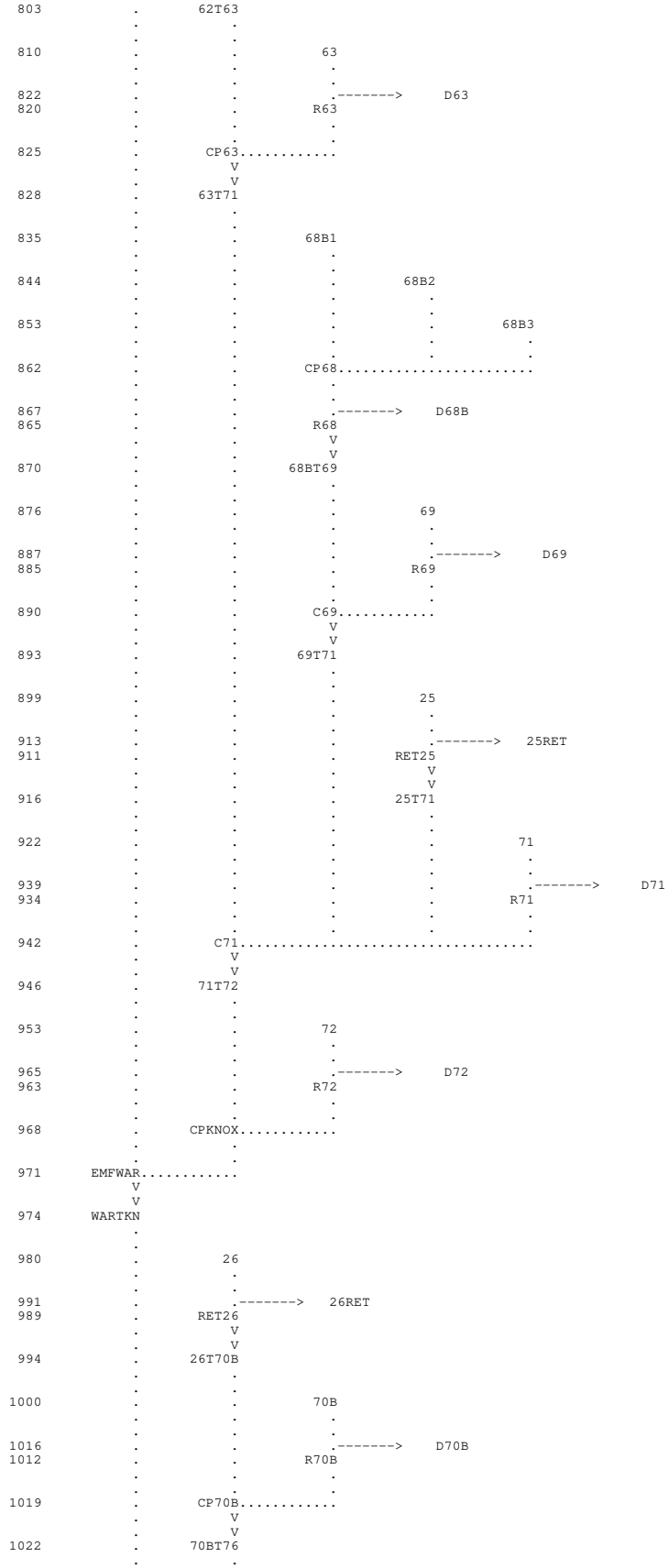
3564          KK  91TEMF
3565          KM  ROUTE 91 TO EMF
3566          KO                                21
3567          RS       1    FLOW      -1
3568          RC   0.035   0.022   0.035    4000   0.003
3569          RX       0     200     230     240     270     280     310     410
3570          RY       9       7       6       0       0       6       7       9
              *
              *

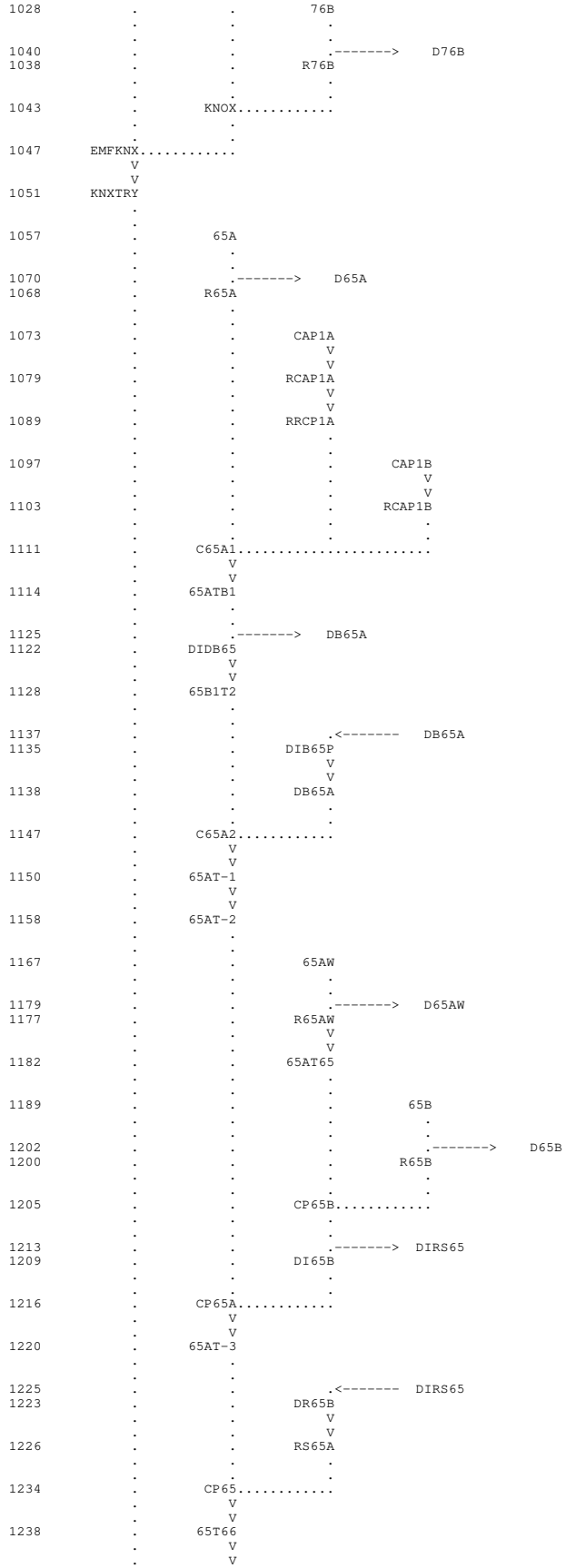
3571          KK  EMFRITRevised by Dibble & Associates to remove combination at "RITTEN"
3572          KM  COMBINE HYDROGRAPHS EMFRT1 AND 91TEMF
              * KO     2
3573          HC       2
              *
              * THIS PORTION OF THE MODEL IS USED TO DEVELOPE HYDROGRAPHS FOR THE CAP1A AND
              * CAP1B OVERCHUTES. ALL PARAMETERS ARE FROM THE SEMESA ADMS DATED 1997
              *
              *
3574          KM  *******  \/ \/ \/ modifications by Dibble & Associates \/ \/ \/ **********
3575          KM
3576          KM  On 12.16.97 - made changes to sub-basins 62C & 62D per County
3577          KM  On 12.17.97 - revised detention Basin DB82A1
3578          KM  On 12.18.97 - Siphon Draw basin to be on-line facility, rearranged sequence
3579          KM  On 12.19.97 - Basin MN4B near Powerline Floodway, data based on grading plan
3580          KM  - Revised Channel Routing parameters for Area 1
3581          KM  On 01.05.98 - Revised Detention Basin DB82A1 & DB82B.
3582          KM  - Coordinated file with FB.
3583          KM  On 01.12.98 - Revised Hydrology per County '97 Land Use Parameters
3584          KM  - File Updated by DDMS
3585          KM  - Retention revised per County '97 Land Use Parameters
3586          KM  On 01.14.98 - Revised routing along the Santan Alignment
3587          KM  On 01.19.98 - Revised channel routing parameters, Area 2 for channel design.
3588          KM  On 01.26.98 - Revised channel routing slopes in non-ADMP design areas to
3589          KM  match the MAG97 values found in file FUTSOUTH.DAT from FCDMC
3590          KM  On 01.26.98 - Revised wording at CAP1A and CAP1B to reflect 217 cfs per
3591          KM  overchute location, not per pipe.  This per Valerie Swick.
3592          KM  On 01.27.98 - Copied the KK 91 to KK EMFRIT sequence from FUTSOUTH.DAT
3593          KM  and revised diagram sequence to add in Santan Fwy channel.
3594          KM  On 01.27.98 - Slope and NSTEPS values for some natural channels input from
3595          KM  the District-supplied file "FUTSOUTH.DAT".
3596          KM  On 01.28.98 - Revised hydrograph names near EMF at Rittenhouse area.
3597          KM  On 02.12.98 - Revised minor station error in channel route 65AT66, RX record
3598          KM  On 02.23.98 - Revised per
3599          KM  FCDMC comments:  Reworded KM record for route 65AT66.
3600          KM  Length for route 65T66 revised to 2400 feet.
3601          KM  KM added to 78B to explain why no retention.
3602          KM  Added channel route for CP82A4 to CP82A5.
1                                        HEC-1 INPUT                                                    PAGE 97

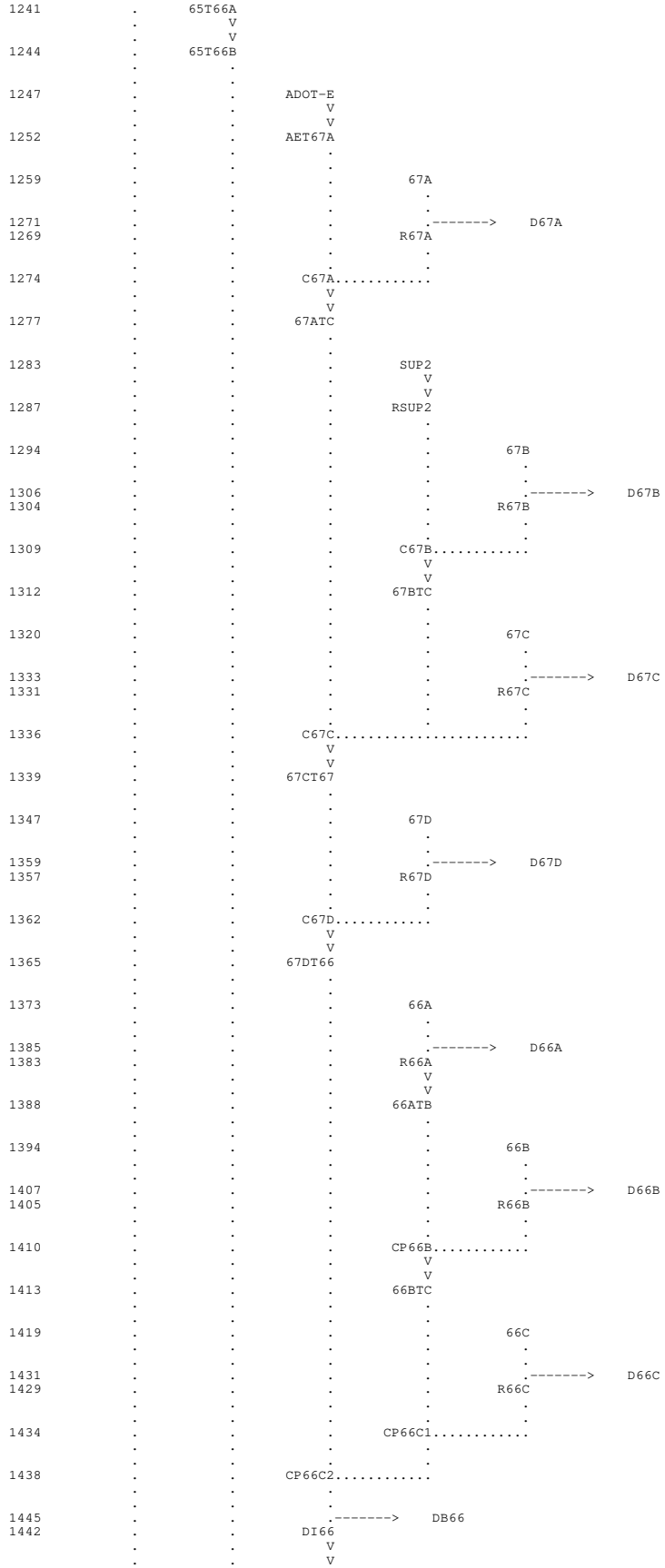
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

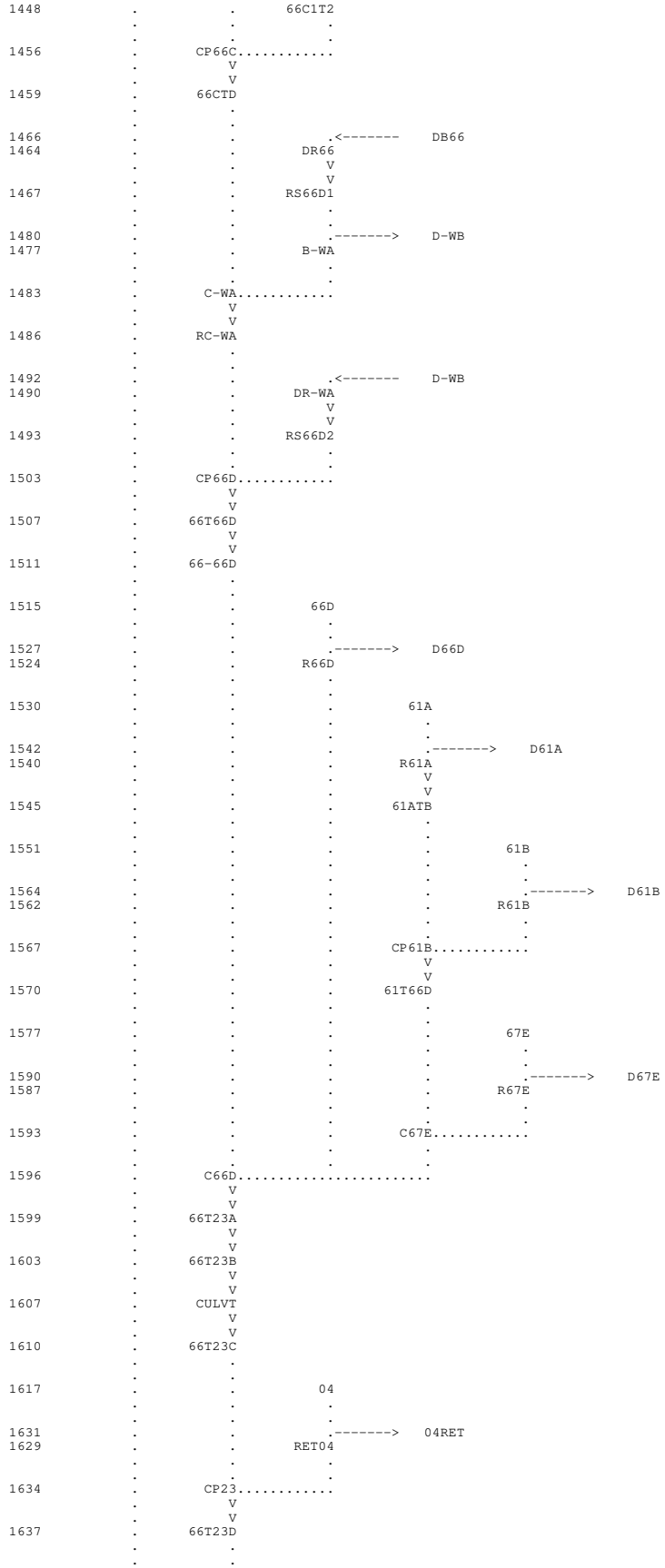
3603          KM  Added 0.25 ratio @ Basin 75, removed retention
3604          KM  On 02.24.98 - Revised Rittenhouse Channel routing to reflect plans
3605          KM  per FCD Contract No. 97-34 (Phase 2)
3606          KM
3607          KM  On 03.03.98 - Received This File as FINAL HYDROLOGY from the FCDMC
3608          KM  On 03.04.98 - Revised flow routing to show the PLF connecting to
3609          KM  the Santan Channel.  Also re-ordered subbasin 80a
3610          KM  to enter the system at the proper location.
3611          KM  On 03.06.98 - Revised KM record for EMFKNX to delete reference to C76A.
3612          KM  On 03.10.98 - Revised preliminary channel sizes from design data.
3613          KM  Added routing reaches represented in design. (Area 1).
3614          KM  On 03.12.98 - Regraded Crismon Basin to avoid ADWR jurisdictional dam.
3615          KM  On 03.13.98 - Revised Siphon Draw Basin to avoid ADWR jurisdictional dam.
3616          KM  On 03.24.98 - Revised normal depth channel routing per Area 2 channel design.
3617          KM  On 04.22.98 - Submitted Hydrology to County.
3618          KM  On 05.20.98 - Revised Hydrology per County Comments
3619          KM  On 06.11.98 - Revised channel properties to reflect earth channels
3620          KM  On 06.12.98 - Submitted file to County (This is a pre-final submittal)
3621          KM
3622          KM  On 06.18.98 - Added combine at Knox Road for better flowrate resolution.
3623          KM
3624          KM  On 07.17.98 - Revised per FCD review comments.  Channel routings revised to
3625          KM  follow the ADMP Preliminary Design Plans.  More verbal
3626          KM  descriptions for channel routings added.
3627          KM
3628          KM  On 07.24.98 - This is the final submittal HEC-1 input file.
3629          KM
3630          KM  On 08.06.98 -Back checked entire file against FCDMC review comments printout.
3631          KM
3632          KM  On 10.21.98 -Revised routing at Elliot basin for prelim. 30% design.
3633          KM
3634          KM  On 10.27.98 -Revised divert for retention at Elliot Basin.
3635          KM
3636          KM  On 01.15.99 -File submitted as part of Elliot Basin Addendum to the ADMP.
3637          KM
3638          KM  *******  ^^^^^ modifications by Dibble & Associates ^^^^^   **************
              *
3639          ZZ
1
```

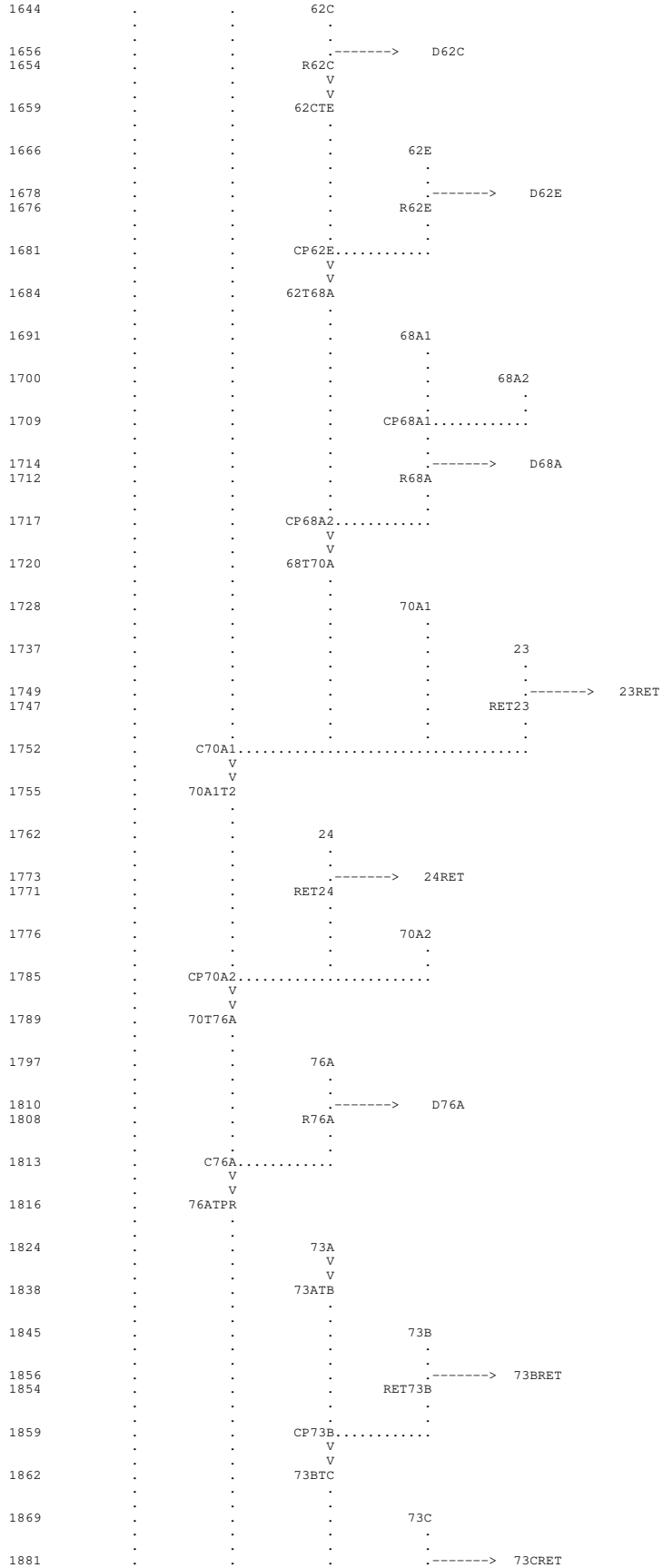

SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT LINE NO.
(V) ROUTING
(.) CONNECTOR
(---->) DIVERSION OR PUMP FLOW
(<----) RETURN OF DIVERTED OR PUMPED FLOW
596 SOSS
601 RSOSS
607 59A
619 D59A
617 R59A
622 C59A
625 59A59B
632 59B
646 D59B
644 R59B
649 C59B
652 59BT60
658 60
675 D60
673 R60
678 EMFGUA
682 GUATEL
688 64
705 D64
699 R64
708 EMFELL
711 ELTWAR
717 62A
728 D62A
726 R62A
731 62ATB
737 62B
748 D62B
746 R62B
751 C62B
754 62BTD
760 62D
773 D62D
771 R62D
776 CP62D
779 62DTF
785 62F
797 D62F
795 R62F
800 CP62F


803 62T63
810 63
822 D63
820 R63
825 CP63
828 63T71
835 68B1
844 68B2
853 68B3
862 CP68
867 D68B
865 R68
870 68BT69
876 69
887 D69
885 R69
890 C69
893 69T71
899 25
913 25RET
911 RET25
916 25T71
922 71
939 D71
934 R71
942 C71
946 71T72
953 72
965 D72
963 R72
968 CPKNOX
971 EMFWAR
974 WARTKN
980 26
991 26RET
989 RET26
994 26T70B
1000 70B
1016 D70B
1012 R70B
1019 CP70B
1022 70BT76


1028 76B
1040 D76B
1038 R76B
1043 KNOX
1047 EMFKNX
1051 KNXTRY
1057 65A
1070 D65A
1068 R65A
1073 CAP1A
1079 RCAP1A
1089 RRCP1A
1097 CAP1B
1103 RCAP1B
1111 C65A1
1114 65ATB1
1125 DB65A
1122 DIDB65
1128 65B1T2
1137 DB65A
1135 DIB65P
1138 DB65A
1147 C65A2
1150 65AT-1
1158 65AT-2
1167 65AW
1179 D65AW
1177 R65AW
1182 65AT65
1189 65B
1202 D65B
1200 R65B
1205 CP65B
1213 DIRS65
1209 DI65B
1216 CP65A
1220 65AT-3
1225 DIRS65
1223 DR65B
1226 RS65A
1234 CP65
1238 65T66


1241 65T66A
1244 65T66B
1247 ADOT-E
1252 AET67A
1259 67A
1271
1269 R67A
1274 C67A
1277 67ATC
1283 SUP2
1287 RSUP2
1294 67B
1306
1304 R67B
1309 C67B
1312 67BTC
1320 67C
1333
1331 R67C
1336 C67C
1339 67CT67
1347 67D
1359
1357 R67D
1362 C67D
1365 67DT66
1373 66A
1385
1383 R66A
1388 66ATB
1394 66B
1407
1405 R66B
1410 CP66B
1413 66BTC
1419 66C
1431
1429 R66C
1434 CP66C1
1438 CP66C2
1445
1442 DI66
D67A
D67B
D67C
D66A
D66B
D66C
DB66


1448 66C1T2
1456 CP66C
1459 66CTD
1466 DB66
1464 DR66
1467 RS66D1
1480 D-WB
1477 B-WA
1483 C-WA
1486 RC-WA
1492 D-WB
1490 DR-WA
1493 RS66D2
1503 CP66D
1507 66T66D
1511 66-66D
1515 66D
1527 D66D
1524 R66D
1530 61A
1542 D61A
1540 R61A
1545 61ATB
1551 61B
1564 D61B
1562 R61B
1567 CP61B
1570 61T66D
1577 67E
1590 D67E
1587 R67E
1593 C67E
1596 C66D
1599 66T23A
1603 66T23B
1607 CULVT
1610 66T23C
1617 04
1631 04RET
1629 RET04
1634 CP23
1637 66T23D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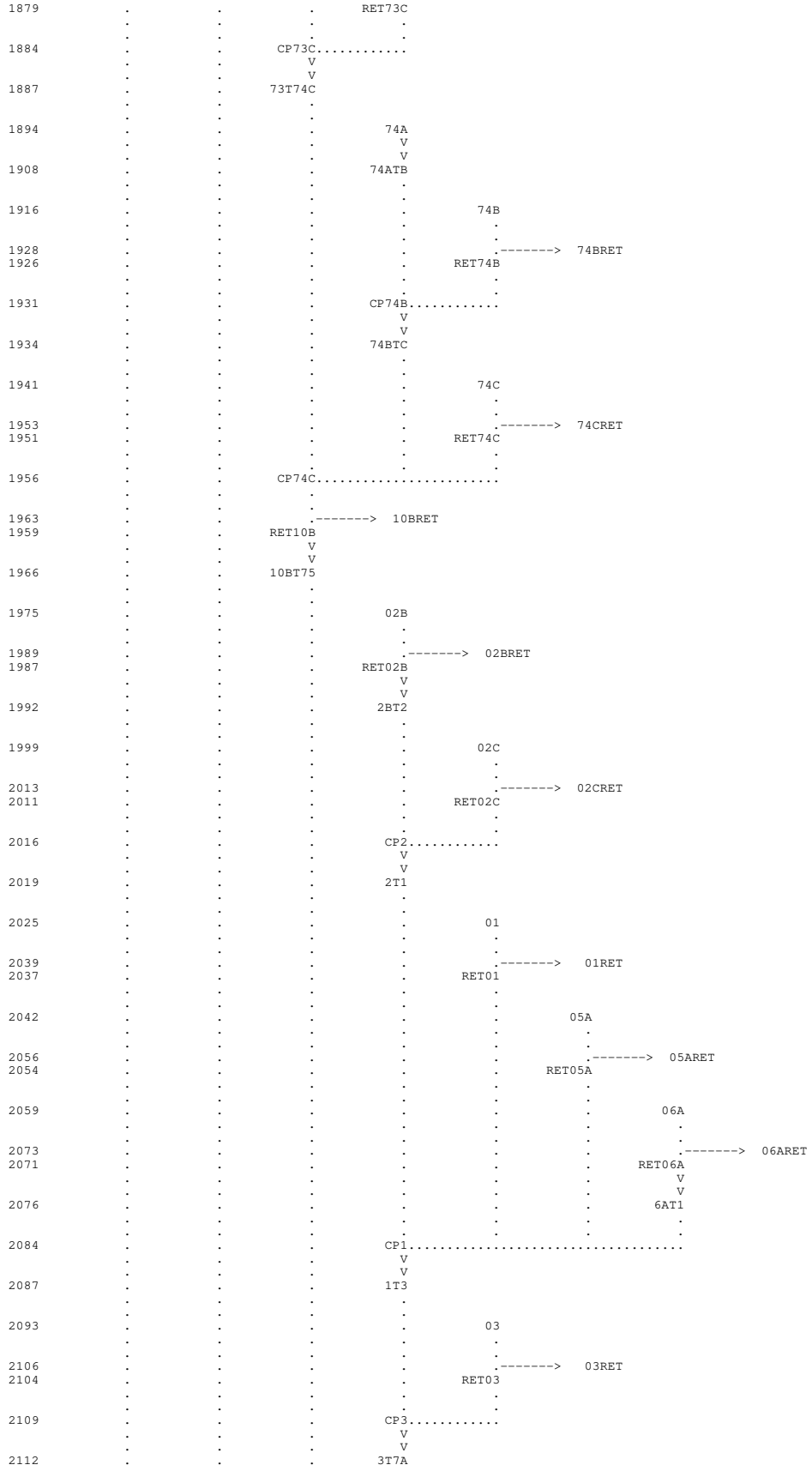
1656 D62C
1654 R62C
1659 62CTE
1666 62E
1678 D62E
1676 R62E
1681 CP62E
1684 62T68A
1691 68A1
1700 68A2
1709 CP68A1
1714 D68A
1712 R68A
1717 CP68A2
1720 68T70A
1728 70A1
1737 23
1749 23RET
1747 RET23
1752 C70A1
1755 70A1T2
1762 24
1773 24RET
1771 RET24
1776 70A2
1785 CP70A2
1789 70T76A
1797 76A
1810 D76A
1808 R76A
1813 C76A
1816 76ATPR
1824 73A
1838 73ATB
1845 73B
1856 73BRET
1854 RET73B
1859 CP73B
1862 73BTC
1869 73C
1881 73CRET


1879 RET73C
1884 CP73C
1887 73T74C
1894 74A
1908 74ATB
1916 74B
1928 74BRET
1926 RET74B
1931 CP74B
1934 74BTC
1941 74C
1953 74CRET
1951 RET74C
1956 CP74C
1963 10BRET
1959 RET10B
1966 10BT75
1975 02B
1989 02BRET
1987 RET02B
1992 2BT2
1999 02C
2013 02CRET
2011 RET02C
2016 CP2
2019 2T1
2025 01
2039 01RET
2037 RET01
2042 05A
2056 05ARET
2054 RET05A
2059 06A
2073 06ARET
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2084 CP1
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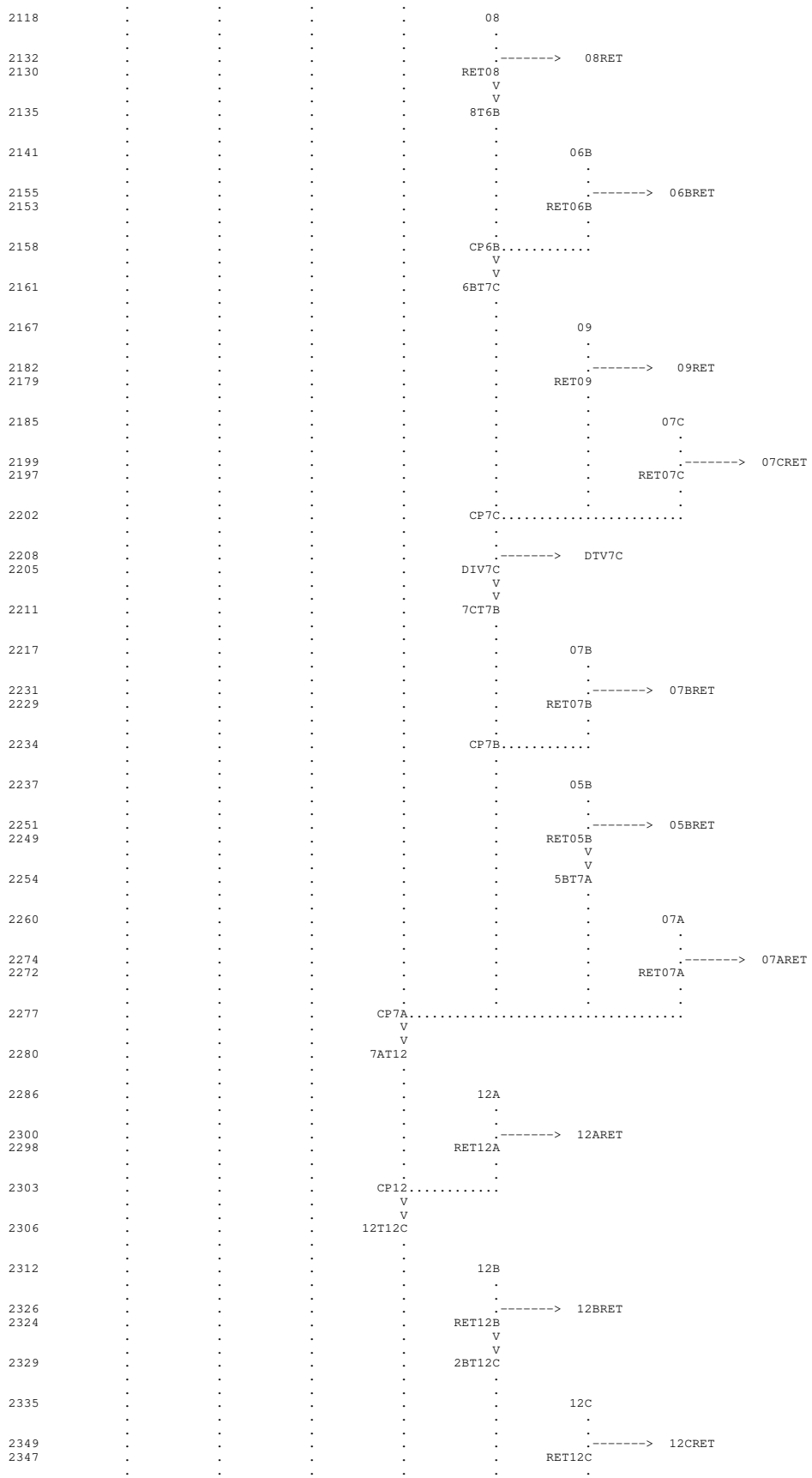
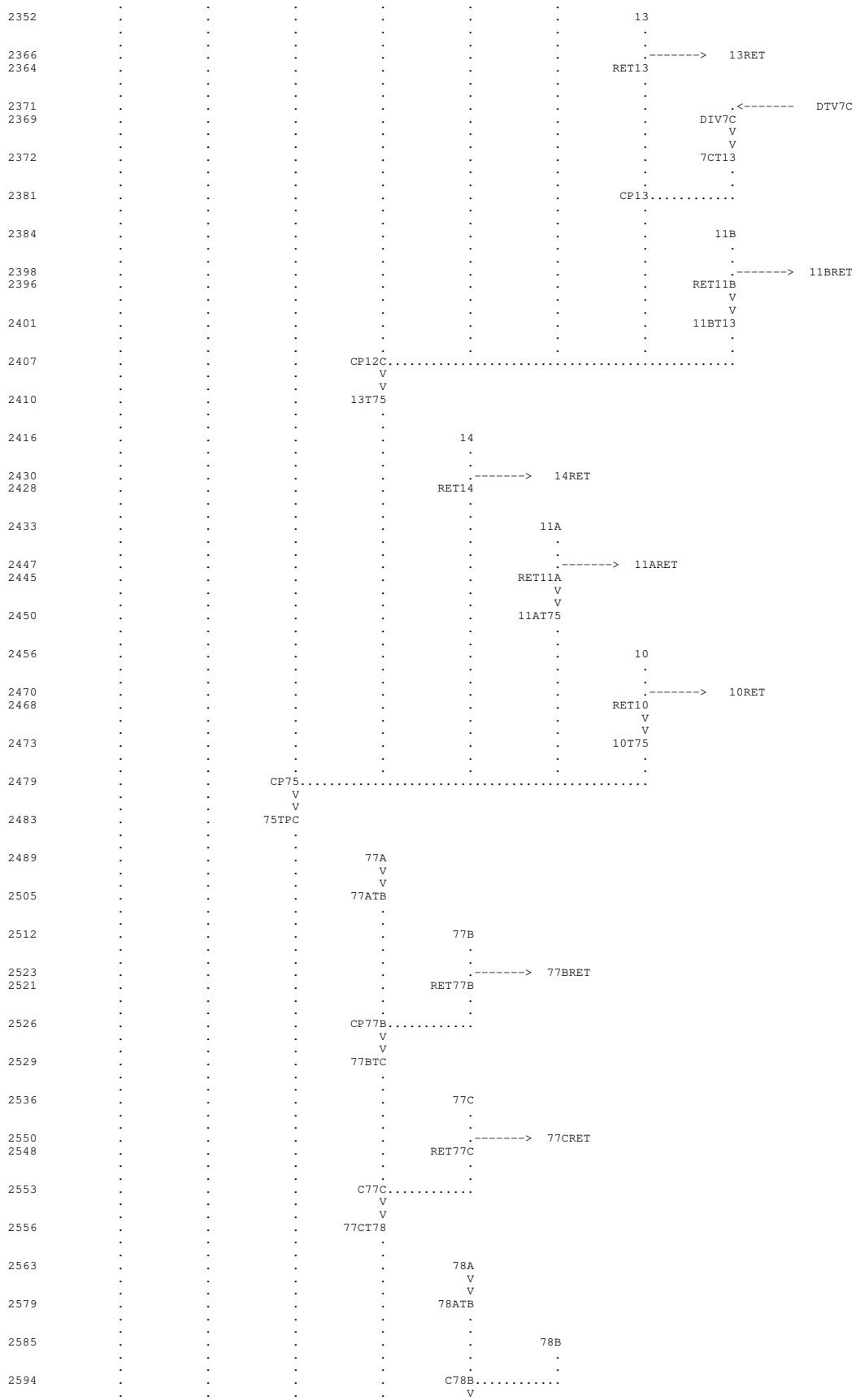
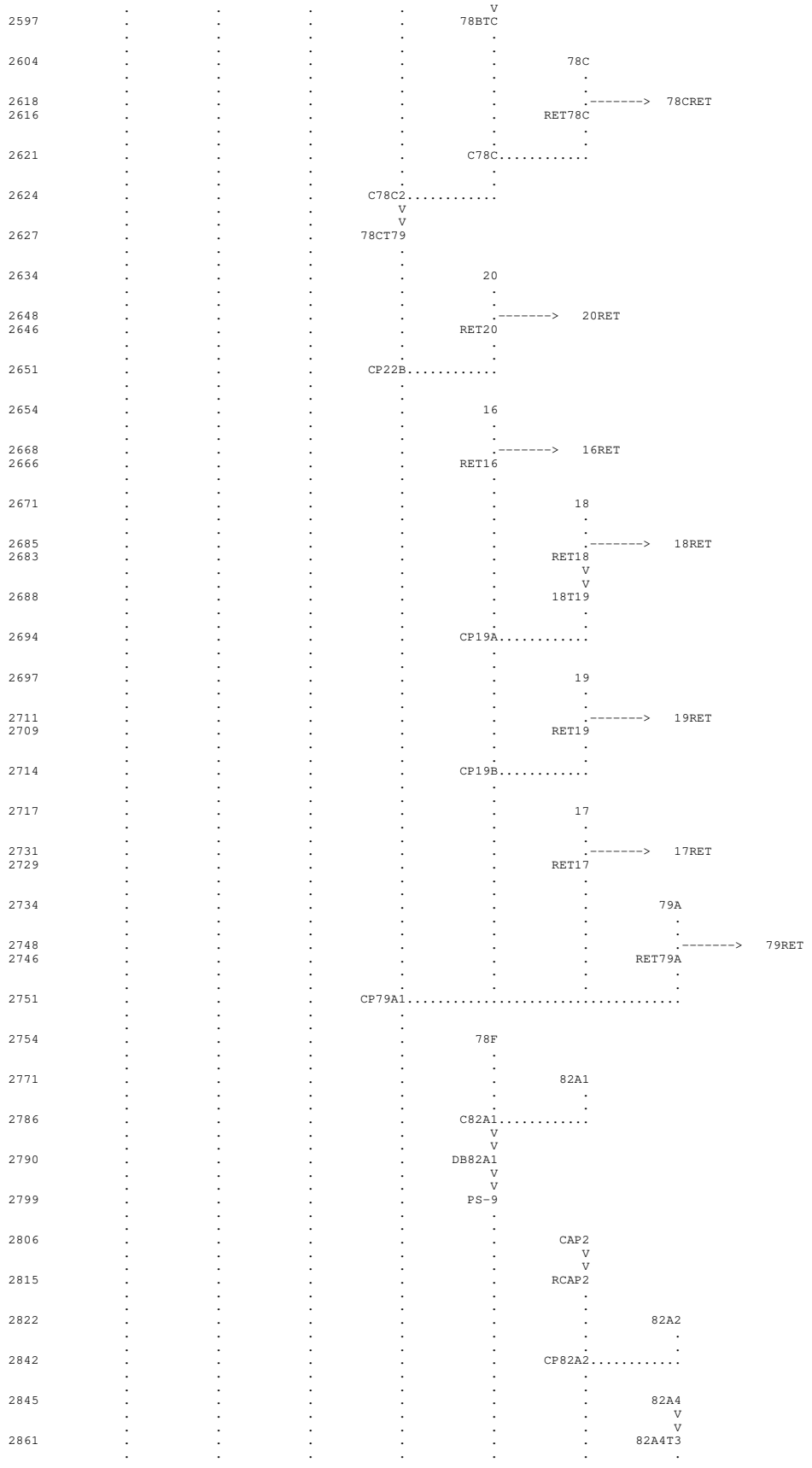
2104 RET03
2109 CP3
2112 3T7A


2118 08
2132 .-------> 08RET
2130 RET08
2135 8T6B
2141 06B
2155 .-------> 06BRET
2153 RET06B
2158 CP6B.....
2161 6BT7C
2167 09
2182 .-------> 09RET
2179 RET09
2185 07C
2199 .-------> 07CRET
2197 RET07C
2202 CP7C.....
2208 .-------> DTV7C
2205 DIV7C
2211 7CT7B
2217 07B
2231 .-------> 07BRET
2229 RET07B
2234 CP7B.....
2237 05B
2251 .-------> 05BRET
2249 RET05B
2254 5BT7A
2260 07A
2274 .-------> 07ARET
2272 RET07A
2277 CP7A.....
2280 7AT12
2286 12A
2300 .-------> 12ARET
2298 RET12A
2303 CP12.....
2306 12T12C
2312 12B
2326 .-------> 12BRET
2324 RET12B
2329 2BT12C
2335 12C
2349 .-------> 12CRET
2347 RET12C


2352
13
2366
13RET
2364
RET13
2371
DTV7C
2369
DIV7C
2372
7CT13
2381
CP13
2384
11B
2398
11BRET
2396
RET11B
2401
11BT13
2407
CP12C
2410
13T75
2416
14
2430
14RET
2428
RET14
2433
11A
2447
11ARET
2445
RET11A
2450
11AT75
2456
10
2470
10RET
2468
RET10
2473
10T75
2479
CP75
2483
75TPC
2489
77A
2505
77ATB
2512
77B
2523
77BRET
2521
RET77B
2526
CP77B
2529
77BTC
2536
77C
2550
77CRET
2548
RET77C
2553
C77C
2556
77CT78
2563
78A
2579
78ATB
2585
78B
2594
C78B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78C
78CRET
RET78C
C78C
C78C2
78CT79
20
20RET
RET20
CP22B
16
16RET
RET16
18
18RET
RET18
18T19
CP19A
19
19RET
RET19
CP19B
17
17RET
RET17
79A
79RET
RET79A
CP79A1
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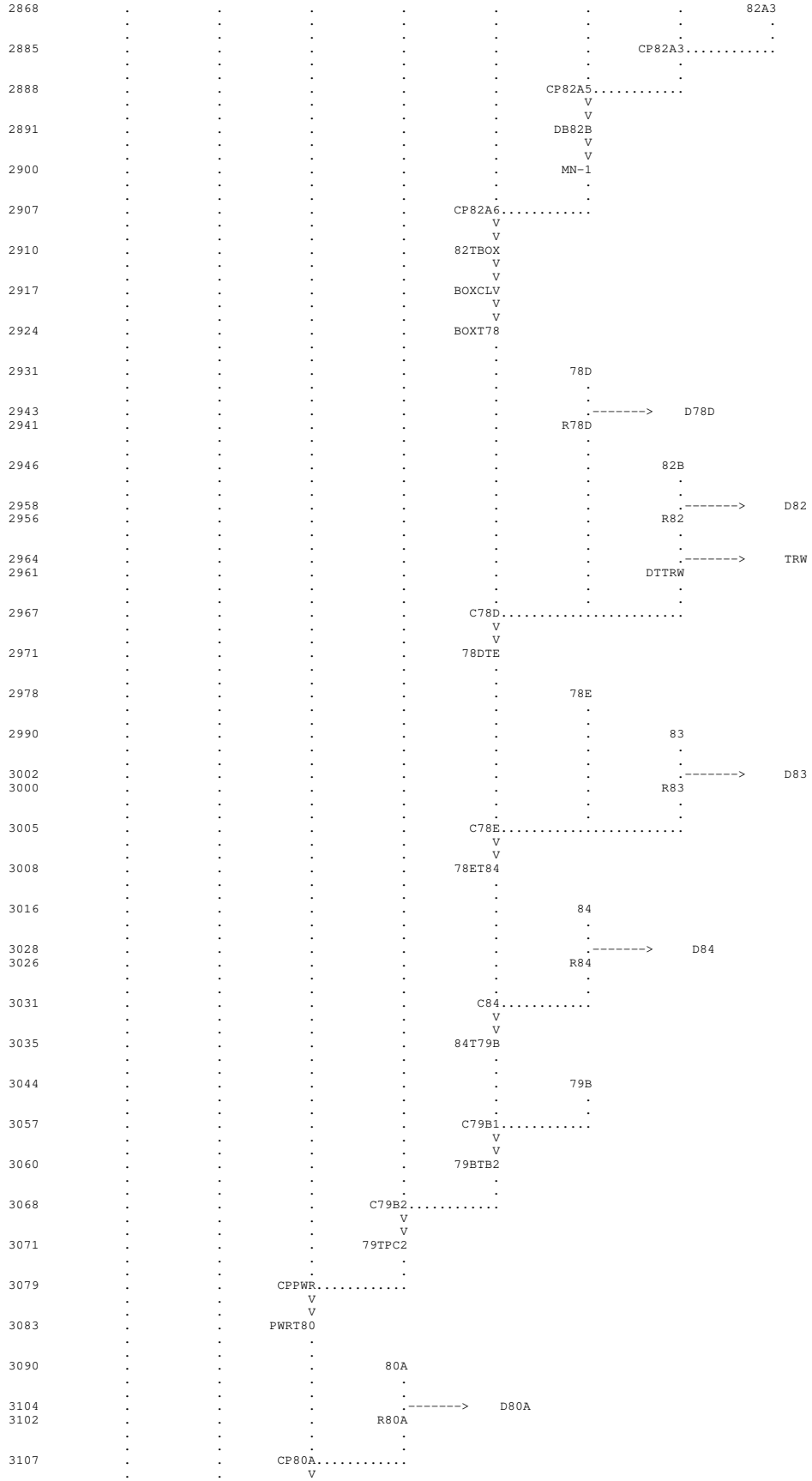
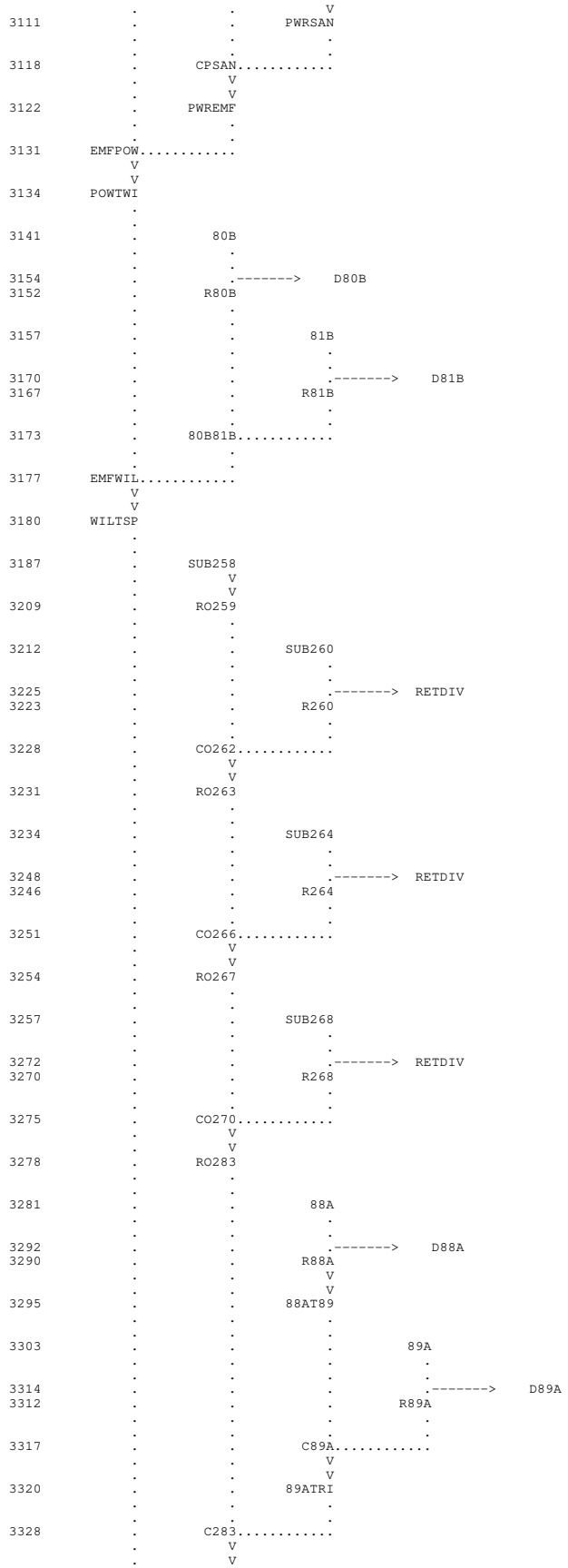
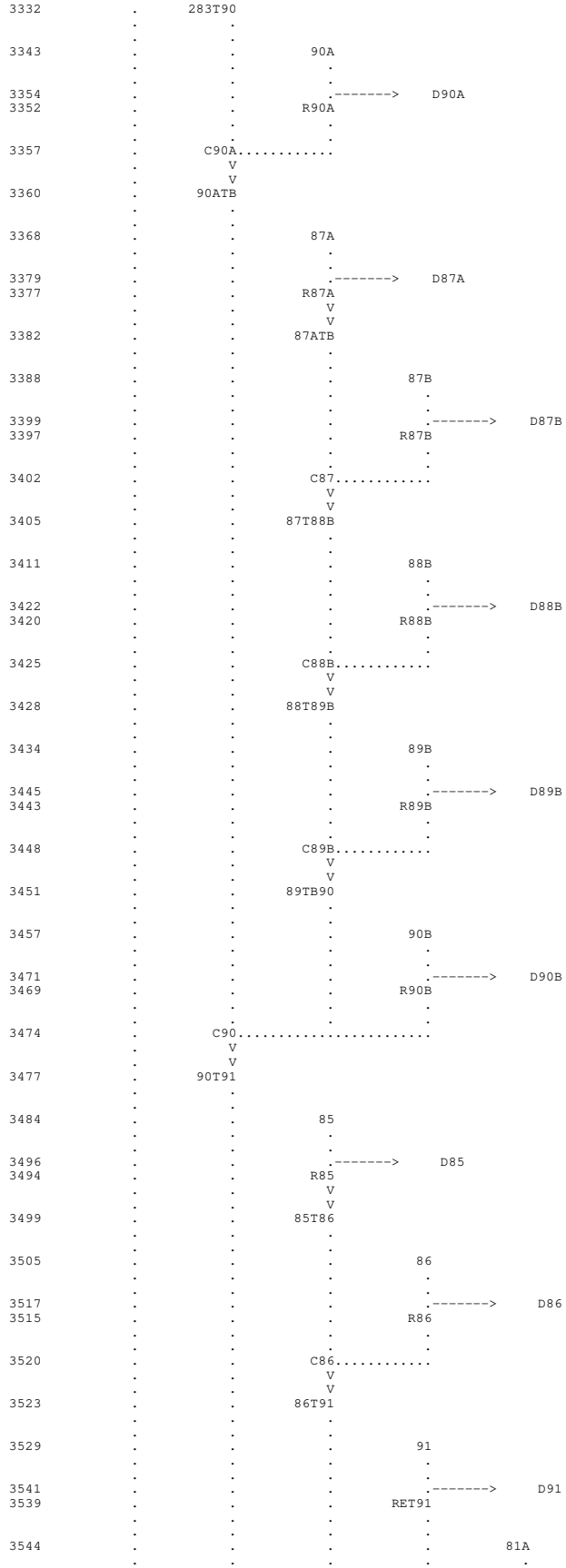
DB82A1
PS-9
CAP2
RCAP2
82A2
CP82A2
82A4
82A4T3


2868
82A3
2885
CP82A3
2888
CP82A5
2891
DB82B
2900
MN-1
2907
CP82A6
2910
82TBOX
2917
BOXCLV
2924
BOXT78
2931
78D
2943
D78D
2941
R78D
2946
82B
2958
D82
2956
R82
2964
TRW
2961
DTTRW
2967
C78D
2971
78DTE
2978
78E
2990
83
3002
D83
3000
R83
3005
C78E
3008
78ET84
3016
84
3028
D84
3026
R84
3031
C84
3035
84T79B
3044
79B
3057
C79B1
3060
79BTB2
3068
C79B2
3071
79TPC2
3079
CPPWR
3083
PWRT80
3090
80A
3104
D80A
3102
R80A
3107
CP80A


3111 PWRSAN
3118 CPSAN
3122 PWREMF
3131 EMFPOW
3134 POWTWI
3141 80B
3154
3152 R80B
3157 81B
3170
3167 R81B
3173 80B81B
3177 EMFWIL
3180 WILTSP
3187 SUB258
3209 RO259
3212 SUB260
3225
3223 R260
3228 CO262
3231 RO263
3234 SUB264
3248
3246 R264
3251 CO266
3254 RO267
3257 SUB268
3272
3270 R268
3275 CO270
3278 RO283
3281 88A
3292
3290 R88A
3295 88AT89
3303 89A
3314
3312 R89A
3317 C89A
3320 89ATRI
3328 C283
D80B
D81B
RETDIV
RETDIV
RETDIV
D88A
D89A


3332 283T90
3343 90A
3354 D90A
3352 R90A
3357 C90A
3360 90ATB
3368 87A
3379 D87A
3377 R87A
3382 87ATB
3388 87B
3399 D87B
3397 R87B
3402 C87
3405 87T88B
3411 88B
3422 D88B
3420 R88B
3425 C88B
3428 88T89B
3434 89B
3445 D89B
3443 R89B
3448 C89B
3451 89TB90
3457 90B
3471 D90B
3469 R90B
3474 C90
3477 90T91
3484 85
3496 D85
3494 R85
3499 85T86
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3517 D86
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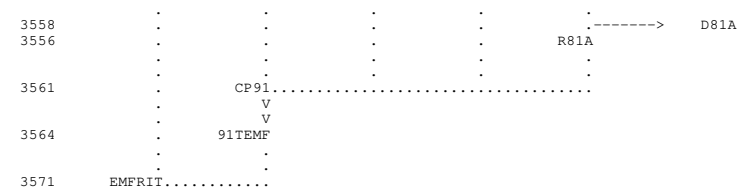
3520 C86
3523 86T91
3529 91
3541 D91
3539 RET91
3544 81A



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************                    *****************************************
 *                                       *                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                    *    U.S. ARMY CORPS OF ENGINEERS       *
 *               JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1                *                    *          609 SECOND STREET            *
 *                                       *                    *       DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   17FEB21  TIME  10:33:52   *                    *           (916) 756-1104              *
 *                                       *                    *                                       *
 *****************************************                    *****************************************
```

FILE: EM125W.DAT

MODEL REVISED: 2-16-2021

PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 1,2, AND 5W)

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR THE UNDEVELOPED UNITS, SPECIFICALLY DU 1, DU 2, DU 5E, DU 5W,
DU 6S, AND DU 6N.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).COMBINED DU 1, DU 2, AND
DU 5W, WHICH IS CALLED DU 1-2-5W. REVISED BOUNDARY AND LAND USES
WITHIN DU 6N AND DU 6S.REVISED SUBBASINS 8 AND 10 BOUNDARIES TO
REFLECT AS-BUILTS. REVISED LAND USES WITHIN UNDEVLEOPED PARCELS
WITHIN DU 3/4 TO REFLECT MORE DETAILED PLANNING.
THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
DISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N
AND DU 7S.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVEN MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2021\215215\PROJECT SUPPORT\REPORTS\DRAINAGE\
OVERALL\HYDROLOGY\PROPOSED\EMDU\EM125W.DAT

****

FILE: EMDU34.DAT

MODEL REVISED: 12-02-2019

PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 2 AND 3/4)

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNITS 2 AND 3/4.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 1, DU 2, DU 3/4,
DU 5 NORTH,DU 6 NORTH, DU 6 SOUTH, AND DU 7 NAMING,BOUNDARIES, AND LAND
USES. RESIDENTIAL LOT COUNTS WITHIN DU 3/4 TO REFLECT APPROVED PLANS.
REVISED LAND USES WITHIN DU 1 AND 2.
THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N
AND DU 7S.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVEN MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2019\195036\PROJECT SUPPORT\REPORTS\DRAINAGE\
OVERALL EM MP UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT

****

FILE: EMDU34.DAT

MODEL REVISED: 09-18-2017

PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 3/4)

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNIT 3/4.

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 3/4, DU 5 NORTH,
DU 6 NORTH, AND DU 6 SOUTH NAMING, BOUNDARIES, AND LAND USES.
RESIDENTIAL LOT COUNTS WITHIN DU 6S TO REFLECT APPROVED PLANS.
REVISED LAND USES WITHIN DU 1 AND 2.
THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, AND
DU 7S.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVEN MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2017\174708\PROJECT SUPPORT\REPORTS\DRAINAGE\
OVERALL EM MP UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT

****

FILE: EMDU56.DAT

MODEL REVISED: 04-04-2017

PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DU 5,DU 5N, AND DU 6S)

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNITS 5, 5N, AND 6S (DU 5, DU 5N, AND DU 6S).

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). REVISED DU 5 NORTH, DU 5,
AND DU 6 SOUTH NAMING, BOUNDARIES, AND LAND USES. REPLACED THE
UNIVERSITY LAND USE FROM DU 3/4 WITH OFFICE AND RESIDENTIAL UNITS.
REVISED LAND USE IN PARCEL 7-24 FROM CHURCH TO EDUCATION. REVISED
RESIDENTIAL LOT COUNTS WITHIN DU 3 SOUTH,DU 6S, AND DU 8 TO REFLECT
APPROVED PLANS. REVISED LAND USES FOR OFFSITE SUBBASIN 77C TO REFLECT
MOUNTAIN HORIZONS SOUTH CONSTRUCTION. REVISED SUBBASIN BOUNDARIES
BASED ON A REVISED MASS GRADING PLAN AND ADDITIONAL DIRECTION PROVIDED
BY DMB. THE 100-YEAR, 24-HOUR RETENTION REQUIREMENTS HAVE BEEN
REDISTRIBUTED TO PORTIONS OF DU 2, DU 3/4, DU 5, DU 5N, DU 6N, AND
DU 7S. SUBBASIN 11 HAS BEEN DIVIDED INTO WATERSHEDS 11A AND 11B.
OUTFALLS FOR SUBBASINS 5A, 5B, 6A, 6B WERE DETERMINED BASED ON DIRECTION
FROM DMB AND DESIGN CONSULTANTS OF DU 5 AND DU 6S. THE OFFSITE RETENTION
FOR SUBBASINS 73B, 73C, 74B, 74C, 77B, 77C, AND 78C WERE UPDATED TO MORE
CLOSELY REFLECT DEVELOPMENT WITHIN THESE WATERSHEDS.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVEN MCKEE, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2016\164528\PROJECT SUPPORT\REPORTS\DRAINAGE\
OVERALL EASTMARK MP UPDATE\HYDROLOGY\PROPOSED\EMDU5E.DAT

****

FILE: EMDU5E.DAT

MODEL REVISED: 04-18-2014

PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DEVELOPMENT UNIT 5 EAST)

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNIT 5 EAST (DU 5E).

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 5E HAS
CHANGED FROM GOLF TO INDUSTRIAL. AREAS THAT PREVIOUSLY DRAINED TO GOLF
WHERE 100-YEAR, 24-HOUR RETENTION WAS PROVIDED WILL NOW BE REQUIRED TO
SELF RETAIN RETENTION VOLUME FROM THEIR SITE FOR THE 100-YEAR, 24-HOUR
STORM PEAK FLOWS HAVE REMAINED THE SAME. THE REMAINING PORTION OF LAND
THAT WAS ASSOCIATED WITH GOLF HAS BEEN REVISED TO RESIDENTIAL USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL MATTHEWS, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2014\144173\PROJECT SUPPORT\REPORTS\DRAINAGE\
EASTMARK OVERALL MASTER DRAINAGE UPDATE\HYDROLOGY\PROPOSED\EMDU5E.DAT

****

FILE: EMDU34.DAT

MODEL REVISED: 04-14-2014

PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3/4

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNIT 3/4 (DU 3/4).

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 3/4 HAS BEEN
REVISED TO REFLECT MORE DETAILED PLANNING. MINOR ADJUSTMENTS TO LAND
USES OUTSIDE OF DU 3/4 HAVE BEEN MADE. ADDITIONALLY WATERSHED
BOUNDARIES HAVE BEEN REVISED TO REFLECT A CONCEPTUAL MASS GRADE PLAN
PROVIDED TO WOOD/PATEL BY A CONSULTANT OF THE DEVELOPER DMB MESA
PROVING GROUNDS LLC.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL MATTHEWS, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2011\113697.09\PROJECT SUPPORT\REPORTS\
EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT

****

FILE: EMDU3S.DAT

MODEL REVISED: 12-11-2013

PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3 SOUTH

THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
FOR DEVELOPMENT UNIT 3 SOUTH (DU-3S).

MODEL REVISION DESCRIPTION:

THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USES FOR DU-3S ARE
CONSISTENT WITH THE PREVIOUS MODEL (EMDU89.DAT) THEREFORE RESULTING
PEAK FLOWS HAVE REMAINED THE SAME.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL MATTHEWS, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2011\113697.08\PROJECT SUPPORT\REPORTS\
EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU3S.DAT

****

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 PR0VIDED 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

****

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 PR0VIDED 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\

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     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 PR0VIDED 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

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

     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 PR0VIDED 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 PR0VIDED 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)
```

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  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 820.00


  ****************************************************************************
  **** 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 FLOOWAY
   CAPACITY MITIGATION AND MULTI-USE CORRIDOR STUDY
   TO ROUTE BOTH THE POWERLINE FLOOWAY
   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
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                          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
                          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

575 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

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

578 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
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00

588 JD        INDEX STORM NO. 2
                     STRM      3.58  PRECIPITATION DEPTH
                     TRDA      1.00  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

589 JD        INDEX STORM NO. 3
                     STRM      3.49  PRECIPITATION DEPTH
                     TRDA      5.00  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

590 JD        INDEX STORM NO. 4
                     STRM      3.38  PRECIPITATION DEPTH
                     TRDA     10.00  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

591 JD        INDEX STORM NO. 5
                     STRM      3.24  PRECIPITATION DEPTH
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                 TRDA       30.00  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

592 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

593 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
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                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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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

594 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

 595 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.   54:  /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.   54:  /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.   54:  /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
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       ---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.   54:  /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.   54:  /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


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


           **************
           *            *
 678 KK    *    EMFGUA  *
           *            *
           **************

 680 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



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


           **************
           *            *
 699 KK    *       R64  *
           *            *
           **************

 704 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



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


           **************
           *            *
 968 KK    *    CPKNOX  *
           *            *
           **************

 969 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



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


           **************
           *            *
1043 KK    *      KNOX  *
           *            *
           **************

1045 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.   54:  /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: 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: /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.   54:  /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.   54:  /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.   54:  /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.   54:  /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.  165:  /CAP1B/OVERCHUTE/FLOW/31MAR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  165:  /CAP1B/OVERCHUTE/FLOW/01APR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  165:  /CAP1B/OVERCHUTE/FLOW/02APR1997/5MIN/100YEAR/
-----DSS---ZWRITE Unit  71; Vers.  165:  /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.   27:  /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.   27:  /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
      ----DSS---Debug:  Enter ZRRTSB;  Unit:  71
       NSTART:    1   NVALS:  601    JULS:   35519  ISTIME:  1440
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       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.   27:  /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.   27:  /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.   27:  /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
       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.   27:  /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.   27:  /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.   27:  /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.   27:  /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.   27:  /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
```

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

            **************
            *            *
2479 KK     *      CP75  *
            *            *
            **************

2481 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           2  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

2482 HC          HYDROGRAPH COMBINATION
                      ICOMP           5  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA       .0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                    (CFS)
+     803.     13.00                337.         99.         48.          48.
                  (INCHES)       .442        .520        .520         .520
                   (AC-FT)       167.        197.        197.         197.

                    CUMULATIVE AREA =    7.09 SQ MI


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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA      1.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                    (CFS)
+     784.     13.08                331.         97.         47.          47.
                  (INCHES)       .433        .510        .510         .510
                   (AC-FT)       164.        193.        193.         193.

                    CUMULATIVE AREA =    7.09 SQ MI


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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA      5.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                    (CFS)
+     686.     13.08                302.         89.         43.          43.
                  (INCHES)       .396        .466        .466         .466
                   (AC-FT)       150.        176.        176.         176.

                    CUMULATIVE AREA =    7.09 SQ MI


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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA     10.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                    (CFS)
+     595.     14.17                267.         79.         38.          38.
                  (INCHES)       .350        .416        .416         .416
                   (AC-FT)       133.        158.        158.         158.

                    CUMULATIVE AREA =    7.09 SQ MI


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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA     30.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                    (CFS)
+     505.     14.17                224.         67.         32.          32.
                  (INCHES)       .294        .354        .354         .354
                   (AC-FT)       111.        134.        134.         134.

                    CUMULATIVE AREA =    7.09 SQ MI


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

                         HYDROGRAPH AT STATION     CP75
                       TRANSPOSITION AREA     60.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
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                          (CFS)
+     450.     14.25                185.         56.         27.          27.
                         (INCHES)     .243        .292        .292         .292
                          (AC-FT)      92.        110.        110.         110.

                          CUMULATIVE AREA =    7.09 SQ MI


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

                          HYDROGRAPH AT STATION     CP75
                         TRANSPOSITION AREA     90.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                          (CFS)
+     423.     14.25                172.         52.         25.          25.
                         (INCHES)     .226        .271        .271         .271
                          (AC-FT)      85.        102.        102.         102.

                          CUMULATIVE AREA =    7.09 SQ MI


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

                          HYDROGRAPH AT STATION     CP75
                         TRANSPOSITION AREA    120.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                          (CFS)
+     405.     14.25                160.         48.         23.          23.
                         (INCHES)     .210        .251        .251         .251
                          (AC-FT)      79.         95.         95.          95.

                          CUMULATIVE AREA =    7.09 SQ MI


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

                          HYDROGRAPH AT STATION     CP75
                         TRANSPOSITION AREA    150.0 SQ MI

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR       24-HR       72-HR     49.92-HR
+   (CFS)       (HR)
                          (CFS)
+     393.     14.25                153.         46.         22.          22.
                         (INCHES)     .201        .239        .239         .239
                          (AC-FT)      76.         90.         90.          90.

                          CUMULATIVE AREA =    7.09 SQ MI
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INTERPOLATED HYDROGRAPH AT CP75

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DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW	DA MON HRMN	ORD	FLOW
1 APR 0000	1	0.	1 APR 1230	151	10.	2 APR 0100	301	25.	2 APR 1330	451	0.
1 APR 0005	2	0.	1 APR 1235	152	16.	2 APR 0105	302	24.	2 APR 1335	452	0.
1 APR 0010	3	0.	1 APR 1240	153	94.	2 APR 0110	303	23.	2 APR 1340	453	0.
1 APR 0015	4	0.	1 APR 1245	154	325.	2 APR 0115	304	21.	2 APR 1345	454	0.
1 APR 0020	5	0.	1 APR 1250	155	468.	2 APR 0120	305	20.	2 APR 1350	455	0.
1 APR 0025	6	0.	1 APR 1255	156	467.	2 APR 0125	306	19.	2 APR 1355	456	0.
1 APR 0030	7	0.	1 APR 1300	157	512.	2 APR 0130	307	18.	2 APR 1400	457	0.
1 APR 0035	8	0.	1 APR 1305	158	591.	2 APR 0135	308	17.	2 APR 1405	458	0.
1 APR 0040	9	0.	1 APR 1310	159	606.	2 APR 0140	309	16.	2 APR 1410	459	0.
1 APR 0045	10	0.	1 APR 1315	160	556.	2 APR 0145	310	15.	2 APR 1415	460	0.
1 APR 0050	11	0.	1 APR 1320	161	510.	2 APR 0150	311	14.	2 APR 1420	461	0.
1 APR 0055	12	0.	1 APR 1325	162	497.	2 APR 0155	312	14.	2 APR 1425	462	0.
1 APR 0100	13	0.	1 APR 1330	163	505.	2 APR 0200	313	13.	2 APR 1430	463	0.
1 APR 0105	14	0.	1 APR 1335	164	519.	2 APR 0205	314	13.	2 APR 1435	464	0.
1 APR 0110	15	0.	1 APR 1340	165	537.	2 APR 0210	315	12.	2 APR 1440	465	0.
1 APR 0115	16	0.	1 APR 1345	166	559.	2 APR 0215	316	11.	2 APR 1445	466	0.
1 APR 0120	17	0.	1 APR 1350	167	583.	2 APR 0220	317	11.	2 APR 1450	467	0.
1 APR 0125	18	0.	1 APR 1355	168	605.	2 APR 0225	318	10.	2 APR 1455	468	0.
1 APR 0130	19	0.	1 APR 1400	169	619.	2 APR 0230	319	10.	2 APR 1500	469	0.
1 APR 0135	20	0.	1 APR 1405	170	626.	2 APR 0235	320	9.	2 APR 1505	470	0.
1 APR 0140	21	0.	1 APR 1410	171	625.	2 APR 0240	321	9.	2 APR 1510	471	0.
1 APR 0145	22	0.	1 APR 1415	172	614.	2 APR 0245	322	8.	2 APR 1515	472	0.
1 APR 0150	23	0.	1 APR 1420	173	594.	2 APR 0250	323	8.	2 APR 1520	473	0.
1 APR 0155	24	0.	1 APR 1425	174	566.	2 APR 0255	324	7.	2 APR 1525	474	0.
1 APR 0200	25	0.	1 APR 1430	175	535.	2 APR 0300	325	7.	2 APR 1530	475	0.
1 APR 0205	26	0.	1 APR 1435	176	502.	2 APR 0305	326	6.	2 APR 1535	476	0.
1 APR 0210	27	0.	1 APR 1440	177	468.	2 APR 0310	327	6.	2 APR 1540	477	0.
1 APR 0215	28	0.	1 APR 1445	178	435.	2 APR 0315	328	6.	2 APR 1545	478	0.
1 APR 0220	29	0.	1 APR 1450	179	404.	2 APR 0320	329	5.	2 APR 1550	479	0.
1 APR 0225	30	0.	1 APR 1455	180	374.	2 APR 0325	330	5.	2 APR 1555	480	0.
1 APR 0230	31	0.	1 APR 1500	181	348.	2 APR 0330	331	4.	2 APR 1600	481	0.
1 APR 0235	32	0.	1 APR 1505	182	327.	2 APR 0335	332	4.	2 APR 1605	482	0.
1 APR 0240	33	0.	1 APR 1510	183	306.	2 APR 0340	333	4.	2 APR 1610	483	0.
1 APR 0245	34	0.	1 APR 1515	184	287.	2 APR 0345	334	4.	2 APR 1615	484	0.
1 APR 0250	35	0.	1 APR 1520	185	269.	2 APR 0350	335	3.	2 APR 1620	485	0.
1 APR 0255	36	0.	1 APR 1525	186	252.	2 APR 0355	336	3.	2 APR 1625	486	0.
1 APR 0300	37	0.	1 APR 1530	187	235.	2 APR 0400	337	3.	2 APR 1630	487	0.
1 APR 0305	38	0.	1 APR 1535	188	219.	2 APR 0405	338	3.	2 APR 1635	488	0.
1 APR 0310	39	0.	1 APR 1540	189	205.	2 APR 0410	339	3.	2 APR 1640	489	0.
1 APR 0315	40	0.	1 APR 1545	190	192.	2 APR 0415	340	3.	2 APR 1645	490	0.
1 APR 0320	41	0.	1 APR 1550	191	180.	2 APR 0420	341	3.	2 APR 1650	491	0.
1 APR 0325	42	0.	1 APR 1555	192	169.	2 APR 0425	342	2.	2 APR 1655	492	0.
1 APR 0330	43	0.	1 APR 1600	193	159.	2 APR 0430	343	2.	2 APR 1700	493	0.
1 APR 0335	44	0.	1 APR 1605	194	151.	2 APR 0435	344	2.	2 APR 1705	494	0.
1 APR 0340	45	0.	1 APR 1610	195	145.	2 APR 0440	345	2.	2 APR 1710	495	0.
1 APR 0345	46	0.	1 APR 1615	196	140.	2 APR 0445	346	2.	2 APR 1715	496	0.

1 APR	0350	47	0.	*	1 APR	1620	197	135.	*	2 APR	0450	347	2.	*	2 APR	1720	497	0.
1 APR	0355	48	0.	*	1 APR	1625	198	131.	*	2 APR	0455	348	2.	*	2 APR	1725	498	0.
1 APR	0400	49	0.	*	1 APR	1630	199	126.	*	2 APR	0500	349	2.	*	2 APR	1730	499	0.
1 APR	0405	50	0.	*	1 APR	1635	200	122.	*	2 APR	0505	350	2.	*	2 APR	1735	500	0.
1 APR	0410	51	0.	*	1 APR	1640	201	118.	*	2 APR	0510	351	2.	*	2 APR	1740	501	0.
1 APR	0415	52	0.	*	1 APR	1645	202	114.	*	2 APR	0515	352	2.	*	2 APR	1745	502	0.
1 APR	0420	53	0.	*	1 APR	1650	203	110.	*	2 APR	0520	353	2.	*	2 APR	1750	503	0.
1 APR	0425	54	0.	*	1 APR	1655	204	106.	*	2 APR	0525	354	2.	*	2 APR	1755	504	0.
1 APR	0430	55	0.	*	1 APR	1700	205	103.	*	2 APR	0530	355	2.	*	2 APR	1800	505	0.
1 APR	0435	56	0.	*	1 APR	1705	206	99.	*	2 APR	0535	356	2.	*	2 APR	1805	506	0.
1 APR	0440	57	0.	*	1 APR	1710	207	95.	*	2 APR	0540	357	2.	*	2 APR	1810	507	0.
1 APR	0445	58	0.	*	1 APR	1715	208	92.	*	2 APR	0545	358	1.	*	2 APR	1815	508	0.
1 APR	0450	59	0.	*	1 APR	1720	209	89.	*	2 APR	0550	359	1.	*	2 APR	1820	509	0.
1 APR	0455	60	0.	*	1 APR	1725	210	87.	*	2 APR	0555	360	1.	*	2 APR	1825	510	0.
1 APR	0500	61	0.	*	1 APR	1730	211	85.	*	2 APR	0600	361	1.	*	2 APR	1830	511	0.
1 APR	0505	62	0.	*	1 APR	1735	212	84.	*	2 APR	0605	362	1.	*	2 APR	1835	512	0.
1 APR	0510	63	0.	*	1 APR	1740	213	83.	*	2 APR	0610	363	1.	*	2 APR	1840	513	0.
1 APR	0515	64	0.	*	1 APR	1745	214	81.	*	2 APR	0615	364	1.	*	2 APR	1845	514	0.
1 APR	0520	65	0.	*	1 APR	1750	215	80.	*	2 APR	0620	365	1.	*	2 APR	1850	515	0.
1 APR	0525	66	0.	*	1 APR	1755	216	79.	*	2 APR	0625	366	1.	*	2 APR	1855	516	0.
1 APR	0530	67	0.	*	1 APR	1800	217	78.	*	2 APR	0630	367	1.	*	2 APR	1900	517	0.
1 APR	0535	68	0.	*	1 APR	1805	218	77.	*	2 APR	0635	368	1.	*	2 APR	1905	518	0.
1 APR	0540	69	0.	*	1 APR	1810	219	76.	*	2 APR	0640	369	1.	*	2 APR	1910	519	0.
1 APR	0545	70	0.	*	1 APR	1815	220	75.	*	2 APR	0645	370	1.	*	2 APR	1915	520	0.
1 APR	0550	71	0.	*	1 APR	1820	221	73.	*	2 APR	0650	371	1.	*	2 APR	1920	521	0.
1 APR	0555	72	0.	*	1 APR	1825	222	72.	*	2 APR	0655	372	1.	*	2 APR	1925	522	0.
1 APR	0600	73	0.	*	1 APR	1830	223	71.	*	2 APR	0700	373	1.	*	2 APR	1930	523	0.
1 APR	0605	74	0.	*	1 APR	1835	224	70.	*	2 APR	0705	374	1.	*	2 APR	1935	524	0.
1 APR	0610	75	0.	*	1 APR	1840	225	69.	*	2 APR	0710	375	1.	*	2 APR	1940	525	0.
1 APR	0615	76	0.	*	1 APR	1845	226	68.	*	2 APR	0715	376	1.	*	2 APR	1945	526	0.
1 APR	0620	77	0.	*	1 APR	1850	227	67.	*	2 APR	0720	377	1.	*	2 APR	1950	527	0.
1 APR	0625	78	0.	*	1 APR	1855	228	65.	*	2 APR	0725	378	1.	*	2 APR	1955	528	0.
1 APR	0630	79	0.	*	1 APR	1900	229	64.	*	2 APR	0730	379	1.	*	2 APR	2000	529	0.
1 APR	0635	80	0.	*	1 APR	1905	230	63.	*	2 APR	0735	380	1.	*	2 APR	2005	530	0.
1 APR	0640	81	0.	*	1 APR	1910	231	62.	*	2 APR	0740	381	0.	*	2 APR	2010	531	0.
1 APR	0645	82	0.	*	1 APR	1915	232	61.	*	2 APR	0745	382	0.	*	2 APR	2015	532	0.
1 APR	0650	83	0.	*	1 APR	1920	233	60.	*	2 APR	0750	383	0.	*	2 APR	2020	533	0.
1 APR	0655	84	0.	*	1 APR	1925	234	59.	*	2 APR	0755	384	0.	*	2 APR	2025	534	0.
1 APR	0700	85	0.	*	1 APR	1930	235	58.	*	2 APR	0800	385	0.	*	2 APR	2030	535	0.
1 APR	0705	86	0.	*	1 APR	1935	236	57.	*	2 APR	0805	386	0.	*	2 APR	2035	536	0.
1 APR	0710	87	0.	*	1 APR	1940	237	56.	*	2 APR	0810	387	0.	*	2 APR	2040	537	0.
1 APR	0715	88	0.	*	1 APR	1945	238	55.	*	2 APR	0815	388	0.	*	2 APR	2045	538	0.
1 APR	0720	89	0.	*	1 APR	1950	239	55.	*	2 APR	0820	389	0.	*	2 APR	2050	539	0.
1 APR	0725	90	0.	*	1 APR	1955	240	54.	*	2 APR	0825	390	0.	*	2 APR	2055	540	0.
1 APR	0730	91	0.	*	1 APR	2000	241	53.	*	2 APR	0830	391	0.	*	2 APR	2100	541	0.
1 APR	0735	92	0.	*	1 APR	2005	242	52.	*	2 APR	0835	392	0.	*	2 APR	2105	542	0.
1 APR	0740	93	0.	*	1 APR	2010	243	51.	*	2 APR	0840	393	0.	*	2 APR	2110	543	0.
1 APR	0745	94	0.	*	1 APR	2015	244	50.	*	2 APR	0845	394	0.	*	2 APR	2115	544	0.
1 APR	0750	95	0.	*	1 APR	2020	245	49.	*	2 APR	0850	395	0.	*	2 APR	2120	545	0.
1 APR	0755	96	0.	*	1 APR	2025	246	49.	*	2 APR	0855	396	0.	*	2 APR	2125	546	0.
1 APR	0800	97	0.	*	1 APR	2030	247	48.	*	2 APR	0900	397	0.	*	2 APR	2130	547	0.
1 APR	0805	98	0.	*	1 APR	2035	248	47.	*	2 APR	0905	398	0.	*	2 APR	2135	548	0.
1 APR	0810	99	0.	*	1 APR	2040	249	46.	*	2 APR	0910	399	0.	*	2 APR	2140	549	0.
1 APR	0815	100	0.	*	1 APR	2045	250	45.	*	2 APR	0915	400	0.	*	2 APR	2145	550	0.
1 APR	0820	101	0.	*	1 APR	2050	251	44.	*	2 APR	0920	401	0.	*	2 APR	2150	551	0.
1 APR	0825	102	0.	*	1 APR	2055	252	43.	*	2 APR	0925	402	0.	*	2 APR	2155	552	0.
1 APR	0830	103	0.	*	1 APR	2100	253	42.	*	2 APR	0930	403	0.	*	2 APR	2200	553	0.
1 APR	0835	104	0.	*	1 APR	2105	254	42.	*	2 APR	0935	404	0.	*	2 APR	2205	554	0.
1 APR	0840	105	0.	*	1 APR	2110	255	41.	*	2 APR	0940	405	0.	*	2 APR	2210	555	0.
1 APR	0845	106	0.	*	1 APR	2115	256	40.	*	2 APR	0945	406	0.	*	2 APR	2215	556	0.
1 APR	0850	107	0.	*	1 APR	2120	257	40.	*	2 APR	0950	407	0.	*	2 APR	2220	557	0.
1 APR	0855	108	0.	*	1 APR	2125	258	39.	*	2 APR	0955	408	0.	*	2 APR	2225	558	0.
1 APR	0900	109	0.	*	1 APR	2130	259	38.	*	2 APR	1000	409	0.	*	2 APR	2230	559	0.
1 APR	0905	110	0.	*	1 APR	2135	260	38.	*	2 APR	1005	410	0.	*	2 APR	2235	560	0.
1 APR	0910	111	0.	*	1 APR	2140	261	37.	*	2 APR	1010	411	0.	*	2 APR	2240	561	0.
1 APR	0915	112	0.	*	1 APR	2145	262	37.	*	2 APR	1015	412	0.	*	2 APR	2245	562	0.
1 APR	0920	113	0.	*	1 APR	2150	263	37.	*	2 APR	1020	413	0.	*	2 APR	2250	563	0.
1 APR	0925	114	0.	*	1 APR	2155	264	37.	*	2 APR	1025	414	0.	*	2 APR	2255	564	0.
1 APR	0930	115	0.	*	1 APR	2200	265	36.	*	2 APR	1030	415	0.	*	2 APR	2300	565	0.
1 APR	0935	116	0.	*	1 APR	2205	266	36.	*	2 APR	1035	416	0.	*	2 APR	2305	566	0.
1 APR	0940	117	0.	*	1 APR	2210	267	36.	*	2 APR	1040	417	0.	*	2 APR	2310	567	0.
1 APR	0945	118	0.	*	1 APR	2215	268	36.	*	2 APR	1045	418	0.	*	2 APR	2315	568	0.
1 APR	0950	119	0.	*	1 APR	2220	269	36.	*	2 APR	1050	419	0.	*	2 APR	2320	569	0.
1 APR	0955	120	0.	*	1 APR	2225	270	36.	*	2 APR	1055	420	0.	*	2 APR	2325	570	0.
1 APR	1000	121	0.	*	1 APR	2230	271	36.	*	2 APR	1100	421	0.	*	2 APR	2330	571	0.
1 APR	1005	122	0.	*	1 APR	2235	272	36.	*	2 APR	1105	422	0.	*	2 APR	2335	572	0.
1 APR	1010	123	0.	*	1 APR	2240	273	35.	*	2 APR	1110	423	0.	*	2 APR	2340	573	0.
1 APR	1015	124	0.	*	1 APR	2245	274	35.	*	2 APR	1115	424	0.	*	2 APR	2345	574	0.
1 APR	1020	125	0.	*	1 APR	2250	275	35.	*	2 APR	1120	425	0.	*	2 APR	2350	575	0.
1 APR	1025	126	0.	*	1 APR	2255	276	35.	*	2 APR	1125	426	0.	*	2 APR	2355	576	0.
1 APR	1030	127	0.	*	1 APR	2300	277	35.	*	2 APR	1130	427	0.	*	3 APR	0000	577	0.
1 APR	1035	128	0.	*	1 APR	2305	278	35.	*	2 APR	1135	428	0.	*	3 APR	0005	578	0.
1 APR	1040	129	0.	*	1 APR	2310	279	35.	*	2 APR	1140	429	0.	*	3 APR	0010	579	0.
1 APR	1045	130	0.	*	1 APR	2315	280	35.	*	2 APR	1145	430	0.	*	3 APR	0015	580	0.
1 APR	1050	131	0.	*	1 APR	2320	281	35.	*	2 APR	1150	431	0.	*	3 APR	0020	581	0.
1 APR	1055	132	0.	*	1 APR	2325	282	35.	*	2 APR	1155	432	0.	*	3 APR	0025	582	0.
1 APR	1100	133	0.	*	1 APR	2330	283	35.	*	2 APR	1200	433	0.	*	3 APR	0030	583	0.
1 APR	1105	134	0.	*	1 APR	2335	284	35.	*	2 APR	1205	434	0.	*	3 APR	0035	584	0.
1 APR	1110	135	0.	*	1 APR	2340	285	35.	*	2 APR	1210	435	0.	*	3 APR	0040	585	0.
1 APR	1115	136	0.	*	1 APR	2345	286	35.	*	2 APR	1215	436	0.	*	3 APR	0045	586	0.
1 APR	1120	137	0.	*	1 APR	2350	287	34.	*	2 APR	1220	437	0.	*	3 APR	0050	587	0.
1 APR	1125	138	0.	*	1 APR	2355	288	34.	*	2 APR	1225	438	0.	*	3 APR	0055	588	0.
1 APR	1130	139	0.	*	2 APR	0000	289	34.	*	2 APR	1230	439	0.	*	3 APR	0100	589	0.
1 APR	1135	140	0.	*	2 APR	0005	290	34.	*	2 APR	1235	440	0.	*	3 APR	0105	590	0.
1 APR	1140	141	0.	*	2 APR	0010	291	33.	*	2 APR	1240	441	0.	*	3 APR	0110	591	0.
1 APR	1145	142	0.	*	2 APR	0015	292	33.	*	2 APR	1245	442	0.	*	3 APR	0115	592	0.
1 APR	1150	143	0.	*	2 APR	0020	293	32.	*	2 APR	1250	443	0.	*	3 APR	0120	593	0.
1 APR	1155	144	0.	*	2 APR	0025	294	31.	*	2 APR	1255	444	0.	*	3 APR	0125	594	0.
1 APR	1200	145	0.	*	2 APR	0030	295	31.	*	2 APR	1300	445	0.	*	3 APR	0130	595	0.
1 APR	1205	146	0.	*	2 APR	0035	296	30.	*	2 APR	1305	446	0.	*	3 APR	0135	596	0.
1 APR	1210	147	0.	*	2 APR	0040	297	29.	*	2 APR	1310	447	0.	*	3 APR	0140	597	0.
1 APR	1215	148	0.	*	2 APR	0045	298	28.	*	2 APR	1315	448	0.	*	3 APR	0145	598	0.
1 APR	1220	149	0.	*	2 APR	0050	299	27.	*	2 APR	1320	449	0.	*	3 APR	0150	599	0.
1 APR	1225	150	0.	*	2 APR	0055	300	26.	*	2 APR	1325	450	0.	*	3 APR	0155	600	0.
				*					*					*					

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

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                          (CFS)
+     626.     14.08                   284.         84.          40.          40.
                        (INCHES)       .373        .441         .441         .441
                         (AC-FT)       141.        167.         167.         167.

                          CUMULATIVE AREA =    7.09 SQ MI

          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
 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
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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
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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           *            *
3122 KK    *    PWREMF  *
           *            *
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3126 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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           *            *
3167 KK    *      R81B  *
           *            *
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3169 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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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

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

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

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.

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                    CUMULATIVE AREA =     .84 SQ MI


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

                      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


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

                      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


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

                      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

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


                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

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


                    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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 3173 KK    *    80B81B  *
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 3175 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   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO267.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
 ***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RO283.
       ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).


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             *            *
 3564 KK     *    91TEMF  *
             *            *
             **************

 3566 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

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

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

          HYDROGRAPH AT
+                            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
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+	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	EMFELL	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	65AT65	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	65AT-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	65T66	537.	14.42	332.	148.	73.	17.14
+	ROUTED TO	65T66A	537.	14.42	332.	148.	73.	17.14
+	ROUTED TO	65T66B	537.	14.42	332.	148.	73.	17.14
+	HYDROGRAPH AT	ADOT-E	246.	14.42	175.	64.	31.	.01
+	ROUTED TO	AET67A	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	67BTC	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	422.	12.33	60.	19.	9.	.28
+ DIVERSION TO	04RET	422.	12.33	52.	14.	7.	.28
+ HYDROGRAPH AT	RET04	84.	12.92	14.	4.	2.	.28
+ 2 COMBINED AT	CP23	1086.	14.50	827.	457.	233.	26.60
+ ROUTED TO	66T23D	1081.	14.58	826.	456.	233.	26.60
+ 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.	18.	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	1150.	14.58	867.	476.	243.	27.92
+ ROUTED TO	70A1T2	1143.	14.75	866.	476.	243.	27.92
+ 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	1158.	14.75	877.	483.	247.	28.21

+	ROUTED TO 70T76A	1148.	15.08	874.	483.	246.	28.21
+	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	1220.	15.00	927.	511.	259.	30.12
+	ROUTED TO 76ATPR	1208.	15.42	925.	511.	259.	30.12
+	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.	20.42	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	440.	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	389.	12.33	27.	8.	4.	.33
+	2 COMBINED AT CP74B	452.	12.33	103.	27.	13.	1.08
+	ROUTED TO 74BTC	414.	12.42	103.	27.	13.	1.08
+	HYDROGRAPH AT 74C	516.	12.25	62.	18.	9.	.34
+	DIVERSION TO 74CRET	516.	12.25	45.	12.	6.	.34
+	HYDROGRAPH AT RET74C	297.	12.42	22.	6.	3.	.34
+	3 COMBINED AT CP74C	635.	12.50	237.	64.	31.	3.39
+	DIVERSION TO 10BRET	537.	12.42	11.	3.	1.	3.39
+	HYDROGRAPH AT RET10B	604.	12.50	227.	61.	29.	3.39
+	ROUTED TO 10BT75	526.	14.17	225.	61.	29.	3.39
+	HYDROGRAPH AT 02B	373.	12.25	47.	15.	7.	.23
+	DIVERSION TO 02BRET	373.	12.25	44.	12.	6.	.23
+	HYDROGRAPH AT RET02B	22.	13.33	9.	3.	1.	.23
+	ROUTED TO 2BT2	17.	14.33	9.	3.	1.	.23
+	HYDROGRAPH AT 02C	319.	12.33	43.	13.	6.	.24

	DIVERSION TO							
+	HYDROGRAPH AT	02CRET	319.	12.33	43.	13.	6.	.24
+	2 COMBINED AT	RET02C	0.	.00	0.	0.	0.	.24
+	ROUTED TO	CP2	17.	14.33	9.	3.	1.	.47
+	HYDROGRAPH AT	2T1	15.	14.92	8.	3.	1.	.47
+	DIVERSION TO	01	532.	12.25	65.	21.	10.	.30
+	HYDROGRAPH AT	01RET	532.	12.25	65.	21.	10.	.30
+	HYDROGRAPH AT	RET01	0.	.00	0.	0.	0.	.30
+	DIVERSION TO	05A	281.	12.33	36.	11.	5.	.19
+	HYDROGRAPH AT	05ARET	281.	12.33	27.	7.	3.	.19
+	HYDROGRAPH AT	RET05A	162.	12.58	13.	4.	2.	.19
+	DIVERSION TO	06A	196.	12.25	19.	6.	3.	.12
+	HYDROGRAPH AT	06ARET	196.	12.25	19.	5.	2.	.12
+	ROUTED TO	RET06A	1.	17.08	1.	0.	0.	.12
+	4 COMBINED AT	6AT1	1.	18.67	1.	0.	0.	.12
+	ROUTED TO	CP1	162.	12.58	19.	7.	3.	1.08
+	HYDROGRAPH AT	1T3	94.	12.83	18.	7.	3.	1.08
+	DIVERSION TO	03	448.	12.25	56.	18.	9.	.25
+	HYDROGRAPH AT	03RET	448.	12.25	56.	18.	9.	.25
+	2 COMBINED AT	RET03	0.	.00	0.	0.	0.	.25
+	ROUTED TO	CP3	94.	12.83	18.	7.	3.	1.34
+	HYDROGRAPH AT	3T7A	61.	13.25	17.	7.	3.	1.34
+	DIVERSION TO	08	618.	12.58	100.	31.	15.	.58
+	HYDROGRAPH AT	08RET	618.	12.58	87.	23.	11.	.58
+	ROUTED TO	RET08	170.	13.08	24.	7.	4.	.58
+	HYDROGRAPH AT	8T6B	112.	13.33	23.	7.	4.	.58
+	DIVERSION TO	06B	172.	12.25	19.	6.	3.	.10
+	HYDROGRAPH AT	06BRET	172.	12.25	14.	4.	2.	.10
+	2 COMBINED AT	RET06B	100.	12.42	7.	2.	1.	.10
+	ROUTED TO	CP6B	118.	13.33	29.	9.	5.	.68
+	HYDROGRAPH AT	6BT7C	113.	13.33	29.	9.	5.	.68
+	DIVERSION TO	09	141.	12.25	13.	4.	2.	.09
+	HYDROGRAPH AT	09RET	141.	12.25	13.	4.	2.	.09
+	HYDROGRAPH AT	RET09	0.	24.33	0.	0.	0.	.09
+	DIVERSION TO	07C	238.	12.08	20.	6.	3.	.11
+	HYDROGRAPH AT	07CRET	238.	12.08	20.	6.	3.	.11
+	3 COMBINED AT	RET07C	0.	.00	0.	0.	0.	.11

+	CP7C	113.	13.33	29.	9.	5.	.89
+ DIVERSION TO	DTV7C	33.	12.50	21.	7.	4.	.89
+ HYDROGRAPH AT	DIV7C	79.	13.33	8.	2.	1.	.89
+ ROUTED TO	7CT7B	67.	13.50	8.	2.	1.	.89
+ HYDROGRAPH AT	07B	269.	12.25	29.	9.	4.	.15
+ DIVERSION TO	07BRET	269.	12.25	29.	9.	4.	.15
+ HYDROGRAPH AT	RET07B	0.	.00	0.	0.	0.	.15
+ 2 COMBINED AT	CP7B	67.	13.50	8.	2.	1.	1.04
+ HYDROGRAPH AT	05B	319.	12.17	31.	9.	4.	.16
+ DIVERSION TO	05BRET	319.	12.17	22.	6.	3.	.16
+ HYDROGRAPH AT	RET05B	182.	12.33	12.	3.	2.	.16
+ ROUTED TO	5BT7A	98.	12.50	11.	3.	2.	.16
+ HYDROGRAPH AT	07A	223.	12.25	27.	8.	4.	.13
+ DIVERSION TO	07ARET	223.	12.25	27.	8.	4.	.13
+ HYDROGRAPH AT	RET07A	0.	.00	0.	0.	0.	.13
+ 4 COMBINED AT	CP7A	102.	12.58	32.	11.	5.	2.66
+ ROUTED TO	7AT12	95.	13.58	32.	11.	5.	2.66
+ HYDROGRAPH AT	12A	218.	12.17	22.	6.	3.	.12
+ DIVERSION TO	12ARET	218.	12.17	19.	5.	2.	.12
+ HYDROGRAPH AT	RET12A	43.	12.58	4.	1.	1.	.12
+ 2 COMBINED AT	CP12	112.	12.67	35.	12.	6.	2.78
+ ROUTED TO	12T12C	94.	13.75	34.	12.	6.	2.78
+ HYDROGRAPH AT	12B	157.	12.17	16.	5.	2.	.09
+ DIVERSION TO	12BRET	157.	12.17	14.	4.	2.	.09
+ HYDROGRAPH AT	RET12B	19.	12.58	4.	1.	1.	.09
+ ROUTED TO	2BT12C	11.	12.92	4.	1.	1.	.09
+ HYDROGRAPH AT	12C	129.	12.17	14.	4.	2.	.08
+ DIVERSION TO	12CRET	129.	12.17	13.	4.	2.	.08
+ HYDROGRAPH AT	RET12C	5.	13.33	2.	1.	0.	.08
+ HYDROGRAPH AT	13	170.	12.25	20.	6.	3.	.12
+ DIVERSION TO	13RET	170.	12.25	20.	6.	3.	.12
+ HYDROGRAPH AT	RET13	0.	.00	0.	0.	0.	.12
+ HYDROGRAPH AT	DIV7C	33.	12.50	21.	7.	4.	.89
+ ROUTED TO	7CT13	33.	13.83	20.	7.	4.	.89
+ 2 COMBINED AT	CP13	33.	13.83	21.	7.	4.	.12
+ HYDROGRAPH AT	11B	284.	12.33	38.	12.	6.	.22
+ DIVERSION TO	11BRET	284.	12.33	36.	10.	5.	.22

+	HYDROGRAPH AT RET11B	13.	13.75	6.	2.	1.	.22
+	ROUTED TO 11BT13	12.	14.00	6.	2.	1.	.22
+	5 COMBINED AT CP12C	133.	13.83	62.	22.	11.	3.28
+	ROUTED TO 13T75	132.	13.92	62.	22.	11.	3.28
+	HYDROGRAPH AT 14	245.	12.08	26.	9.	4.	.12
+	DIVERSION TO 14RET	245.	12.08	22.	6.	3.	.12
+	HYDROGRAPH AT RET14	42.	12.42	8.	3.	1.	.12
+	HYDROGRAPH AT 11A	93.	12.42	14.	5.	2.	.08
+	DIVERSION TO 11ARET	93.	12.42	14.	4.	2.	.08
+	HYDROGRAPH AT RET11A	3.	14.75	2.	1.	0.	.08
+	ROUTED TO 11AT75	3.	15.17	2.	1.	0.	.08
+	HYDROGRAPH AT 10	310.	12.42	44.	14.	7.	.23
+	DIVERSION TO 10RET	310.	12.42	32.	9.	4.	.23
+	HYDROGRAPH AT RET10	181.	12.67	17.	5.	2.	.23
+	ROUTED TO 10T75	107.	13.17	17.	5.	2.	.23
+	5 COMBINED AT CP75	626.	14.08	284.	84.	40.	7.09
+	ROUTED TO 75TPC	624.	14.17	283.	84.	40.	7.09
+	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.	6.	3.	.35
+	2 COMBINED AT CP77B	529.	13.83	191.	49.	23.	2.09
+	ROUTED TO 77BTC	503.	14.08	189.	49.	23.	2.09
+	HYDROGRAPH AT 77C	383.	12.33	46.	14.	7.	.28
+	DIVERSION TO 77CRET	383.	12.33	35.	9.	5.	.28
+	HYDROGRAPH AT RET77C	204.	12.58	15.	4.	2.	.28
+	2 COMBINED AT C77C	511.	14.08	202.	53.	25.	2.37
+	ROUTED TO 77CT78	494.	14.42	198.	53.	25.	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	529.	12.17	52.	15.	7.	.29
+	DIVERSION TO 78CRET	3.	8.33	3.	1.	0.	.29
+	HYDROGRAPH AT RET78C	529.	12.17	52.	14.	7.	.29

+	2 COMBINED AT	C78C	904.	12.25	293.	77.	37.	2.56
+	2 COMBINED AT	C78C2	951.	14.58	475.	127.	61.	4.93
+	ROUTED TO	78CT79	940.	14.75	473.	127.	61.	4.93
+	HYDROGRAPH AT	20	370.	12.42	52.	15.	7.	.27
+	DIVERSION TO	20RET	370.	12.42	49.	13.	6.	.27
+	HYDROGRAPH AT	RET20	38.	13.25	7.	2.	1.	.27
+	2 COMBINED AT	CP22B	944.	14.75	475.	128.	62.	5.20
+	HYDROGRAPH AT	16	174.	12.25	18.	5.	3.	.10
+	DIVERSION TO	16RET	174.	12.25	14.	4.	2.	.10
+	HYDROGRAPH AT	RET16	57.	12.50	5.	1.	1.	.10
+	HYDROGRAPH AT	18	398.	12.42	51.	15.	7.	.32
+	DIVERSION TO	18RET	398.	12.42	47.	12.	6.	.32
+	HYDROGRAPH AT	RET18	51.	13.00	8.	3.	1.	.32
+	ROUTED TO	18T19	35.	13.08	8.	3.	1.	.32
+	2 COMBINED AT	CP19A	57.	12.50	13.	4.	2.	.42
+	HYDROGRAPH AT	19	250.	12.25	29.	9.	4.	.14
+	DIVERSION TO	19RET	250.	12.25	21.	6.	3.	.14
+	HYDROGRAPH AT	RET19	134.	12.42	10.	3.	1.	.14
+	2 COMBINED AT	CP19B	175.	12.42	23.	7.	3.	.56
+	HYDROGRAPH AT	17	169.	12.33	21.	7.	3.	.14
+	DIVERSION TO	17RET	169.	12.33	21.	6.	3.	.14
+	HYDROGRAPH AT	RET17	1.	23.00	0.	0.	0.	.14
+	HYDROGRAPH AT	79A	1077.	12.67	208.	65.	31.	1.00
+	DIVERSION TO	79RET	939.	12.50	95.	27.	13.	1.00
+	HYDROGRAPH AT	RET79A	1077.	12.67	137.	38.	18.	1.00
+	4 COMBINED AT	CP79A1	1725.	12.67	604.	166.	80.	6.90
+	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	BOXT78	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	TRW	1558.	12.17	181.	56.	27.	.92
+	HYDROGRAPH AT	DTTRW	19.	19.33	12.	3.	1.	.92
+	3 COMBINED AT	C78D	1111.	12.58	521.	430.	287.	17.41
+	ROUTED TO	78DTE	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	2203.	13.17	1218.	613.	370.	28.32
+	ROUTED TO	79TPC2	2190.	13.33	1217.	613.	370.	28.32
+	2 COMBINED AT	CPPWR	2454.	13.33	1395.	666.	394.	35.41

+	ROUTED TO	PWRT80	2443.	13.42	1393.	665.	393.	35.41
+	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	3956.	12.92	1846.	800.	464.	38.05
+	ROUTED TO	PWRSAN	3882.	13.00	1844.	800.	463.	38.05
+	2 COMBINED AT	CPSAN	3622.	13.00	2339.	1227.	677.	68.17
+	ROUTED TO	PWREMF	3551.	13.25	2332.	1227.	676.	68.17
+	2 COMBINED AT	EMFPOW	4042.	14.42	3072.	1551.	838.	90.48
+	ROUTED TO	POWTWI	4018.	14.58	3064.	1551.	836.	90.48
+	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	4130.	13.42	3159.	1629.	878.	92.44
+	ROUTED TO	WILTSP	4048.	14.83	3158.	1628.	876.	92.44
+	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							
+	HYDROGRAPH AT	D88A	1139.	12.00	88.	25.	12.	.50
+	ROUTED TO	R88A	602.	12.17	51.	16.	8.	.50
+	2 COMBINED AT	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
+	ROUTED TO	C89A	566.	12.25	98.	31.	15.	1.00
+	2 COMBINED AT	89ATRI	319.	12.67	95.	31.	15.	1.00
+	ROUTED TO	C283	722.	22.92	480.	182.	88.	7.60
+	HYDROGRAPH AT	283T90	719.	23.17	479.	182.	88.	7.60
+	DIVERSION TO	90A	939.	12.08	98.	33.	16.	.48
+	HYDROGRAPH AT	D90A	939.	12.08	76.	21.	10.	.48
+	2 COMBINED AT	R90A	456.	12.25	37.	12.	6.	.48
+	ROUTED TO	C90A	724.	23.17	481.	190.	92.	8.08
+	HYDROGRAPH AT	90ATB	720.	23.33	480.	190.	92.	8.08
+	DIVERSION TO	87A	1041.	12.08	116.	40.	19.	.49
+	HYDROGRAPH AT	D87A	1041.	12.08	87.	25.	12.	.49
+	ROUTED TO	R87A	435.	12.25	49.	15.	7.	.49
+	HYDROGRAPH AT	87ATB	182.	12.75	47.	15.	7.	.49
+	DIVERSION TO	87B	1022.	12.08	117.	40.	19.	.49
+	HYDROGRAPH AT	D87B	1022.	12.08	87.	25.	12.	.49
+	2 COMBINED AT	R87B	512.	12.25	50.	15.	7.	.49
+	ROUTED TO	C87	512.	12.25	95.	31.	15.	.98
+	HYDROGRAPH AT	87T88B	248.	12.92	92.	31.	15.	.98
+	DIVERSION TO	88B	1034.	12.08	118.	41.	20.	.50
+	HYDROGRAPH AT	D88B	1034.	12.08	89.	25.	12.	.50
+	2 COMBINED AT	R88B	518.	12.25	49.	15.	7.	.50
+	ROUTED TO	C88B	505.	12.25	137.	45.	22.	1.48
+	HYDROGRAPH AT	88T89B	314.	13.33	134.	45.	22.	1.48
+	DIVERSION TO	89B	1047.	12.08	117.	40.	19.	.50
+	HYDROGRAPH AT	D89B	1047.	12.08	87.	25.	12.	.50
+	2 COMBINED AT	R89B	438.	12.17	50.	16.	7.	.50
+	ROUTED TO	C89B	433.	12.25	177.	60.	29.	1.98
+	HYDROGRAPH AT	89TB90	355.	13.92	172.	60.	29.	1.98
+	DIVERSION TO	90B	668.	12.67	128.	39.	19.	.82
+	HYDROGRAPH AT	D90B	379.	12.25	39.	12.	6.	.82

+		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	4525.	13.67	3565.	1901.	1015.	107.59

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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	

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	527.45	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

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

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          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

          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
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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

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

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            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


          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
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          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
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Post Developed HEC-1 Sub-Basin Data

Table 6 - Post Developed HEC-1 Sub-Basin Data

Description: Sub-basin data based on aerial photo and proposed topography

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

ONSITE BASINS

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	Length +10% (mi)[1]	USGE (ft)	DSGE (ft)	Lca (ft)	Lca (mi)
1	8,335,456	191.36	0.299	4713	0.89	0.98	1445.0	1426.0	1354	0.26
2B	6,494,934	149.10	0.233	4909	0.93	1.02	1460.0	1441.0	1374	0.26
2C	6,751,871	155.00	0.242	5515	1.04	1.14	1460.0	1438.0	2225	0.42
3	7,090,662	162.78	0.254	4986	0.94	1.03	1432.0	1412.0	1207	0.23
4	7,906,648	181.51	0.284	4093	0.78	0.86	1415.0	1400.0	2781	0.53
5A	5,234,676	120.17	0.188	4356	0.83	0.91	1437.0	1425.0	2073	0.39
5B	4,357,936	100.04	0.156	3095	0.59	0.65	1423.0	1409.0	640	0.12
6A	3,355,141	77.02	0.120	3816	0.72	0.79	1446.0	1429.0	950	0.18
6B	2,865,742	65.79	0.103	2885	0.55	0.61	1427.0	1417.0	1778	0.34
7A	3,652,969	83.86	0.131	3999	0.76	0.84	1413.0	1404.0	889	0.17
7B	4,214,789	96.76	0.151	3494	0.66	0.73	1417.0	1394.0	1502	0.28
7C	3,158,912	72.52	0.113	2120	0.40	0.44	1419.0	1396.5	880	0.17
8	16,142,721	370.59	0.579	7230	1.37	1.51	1444.0	1415.0	4310	0.82
9	2,609,899	59.92	0.094	3313	0.63	0.69	1419.0	1402.0	1321	0.25
10	6,348,717	145.75	0.228	5320	1.01	1.11	1444.0	1423.0	2970	0.56
11A	2,172,787	49.88	0.078	5833	1.10	1.21	1422.0	1398.0	2530	0.48
11B	6,101,226	140.06	0.219	5867	1.11	1.22	1420.0	1392.0	1878	0.36
12A	3,264,256	74.94	0.117	2890	0.55	0.61	1405.0	1392.0	1178	0.22
12B	2,423,721	55.64	0.087	2764	0.52	0.57	1402.0	1395.0	1337	0.25
12C	2,098,178	48.17	0.075	2951	0.56	0.62	1400.0	1392.0	1361	0.26
13	3,372,581	77.42	0.121	4566	0.86	0.95	1407.0	1390.0	1398	0.26
14	3,248,624	74.58	0.117	2211	0.42	0.46	1397.0	1389.0	1070	0.20
16	2,747,312	63.07	0.099	2922	0.55	0.61	1425.0	1410.0	1269	0.24
17	3,919,629	89.98	0.141	4430	0.84	0.92	1412.0	1394.0	2485	0.47
18	8,921,616	204.81	0.320	5147	0.97	1.07	1435.0	1420.0	2085	0.39
19	3,855,367	88.51	0.138	2937	0.56	0.62	1420.0	1410.0	1250	0.24
20	7,514,092	172.50	0.270	5897	1.12	1.23	1430.0	1412.0	2182	0.41
Totals	**138,160,462**	**3171.73**	**4.957**							

OFFSITE BASINS (EAST OF SIGNAL BUTTE ROAD OR SOUTH OF RAY)

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	USGE (ft)	DSGE (ft)	Lca (mi)
73A	26,400,845	606.08	0.947	12144	2.30	1567.3	1487.0	1.00
73B	11,854,970	272.15	0.425	2957	0.56	1487.0	1470.0	0.28
73C	16,310,497	374.44	0.585	7022	1.33	1480.0	1450.0	0.30
74A	21,020,314	482.56	0.754	12672	2.40	1563.0	1461.7	1.00
74B	9,278,312	213.00	0.333	6917	1.31	1490.0	1459.0	0.41
74C	9,606,165	220.53	0.345	6442	1.22	1471.0	1440.0	0.40
77A	48,480,538	1,112.96	1.739	15312	2.90	1559.0	1468.8	1.50
77B	9,740,171	223.60	0.349	2957	0.56	1469.0	1453.0	0.26
77C	7,769,721	178.37	0.279	4013	0.76	1457.0	1439.0	0.51
78A	52,467,149	1,204.48	1.882	19536	3.70	1558.0	1452.6	2.10
78B	11,047,090	253.61	0.396	3168	0.60	1460.0	1441.0	0.40
78C	8,018,731	184.08	0.288	2640	0.50	1448.0	1432.1	0.30
79A	27,835,085	639.01	0.998	7524	1.43	1411.0	1390.0	0.82
Totals	**259,829,588**	**5964.87**	**9.320**					

OFFSITE BASINS (WEST OF ELLSWORTH ROAD)

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	Length (ft)	Length (mi)	USGE (ft)	DSGE (ft)	Lca (mi)
23	6,088,253	139.77	0.218	3767	0.78	1405.0	1391.0	0.36
24	7,031,535	161.42	0.252	3967	0.83	1400.0	1380.0	0.38
25	5,794,910	133.03	0.208	4355	0.91	1390.0	1375.0	0.41
26	1,264,710	29.03	0.045	2028	0.42	1389.0	1380.0	0.19
68A1	8,293,239	190.39	0.297	4843	0.92	1425.7	1391.0	0.46
68A2	1,336,285	30.68	0.048	2634	0.50	1410.9	1392.0	0.25
68B1	4,078,185	93.62	0.146	3951	0.75	1402.2	1378.0	0.38
68B2	1,681,764	38.61	0.060	2916	0.55	1395.8	1378.0	0.28
68B3	989,689	22.72	0.036	1916	0.36	1392.6	1381.0	0.18
70A1	1,491,048	34.23	0.053	2750	0.52	1392.0	1390.0	0.26
70A2	994,745	22.84	0.036	2700	0.51	1390.0	1380.0	0.26
70B	9,099,867	208.90	0.326	8448	1.60	1390.0	1342.0	1.10
71	23,991,985	550.78	0.861	8448	1.60	1378.0	1335.8	0.80
Totals	**72,136,215**	**1,656.02**	**2.586**					

Notes:
1) 10% was added to onsite watercourse lengths to account for future roadway curvature

Post Developed HEC-1 Soil Data

Table 7 - Post Developed HEC-1 - Soils Data

Description: Post Developed Soil Data

Location Eastmark - East Mesa, Arizona

Reference: NRCS Web Soil Survey
Aguila-Carefree Area Soil Survey

Sub-Basin ID	Soil Id	Soil Type	Area (S.F.)	Area (acres)	Area (sq. mi.)
1	50	Estrella Loams	984558	22.60	0.035
	75	Mohall Loam	1119157	25.69	0.040
	77	Mohall Clay Loam	6232139	143.07	0.224
		TOTAL	**8335854**	**191.36**	**0.299**
2B	50	Estrella Loams	146797	3.37	0.005
	75	Mohall Loam	4949104	113.62	0.177
	77	Mohall Clay Loam	907950	20.84	0.033
	1	Antho Sandy Loams	490780	11.27	0.018
		TOTAL	**6494631**	**149.10**	**0.233**
2C	75	Mohall Loam	4013552	92.14	0.143
	77	Mohall Clay Loam	1757428	40.34	0.063
	50	Estrella Loams	824048	18.92	0.030
	1	Antho Sandy Loams	156437	3.59	0.006
		TOTAL	**6751465**	**154.99**	**0.242**
3	79	Mohall Clay	1900859	43.64	0.068
	50	Estrella Loams	52868	1.21	0.002
	75	Mohall Loam	769173	17.66	0.028
	77	Mohall Clay Loam	4367761	100.27	0.156
		TOTAL	**7090661**	**162.78**	**0.254**
4	112	Tremant Gravelly Sandy Loams	336444	7.72	0.012
	50	Estrella Loams	788761	18.11	0.028
	79	Mohall Loam	1671405	38.37	0.060
	77	Mohall Clay Loam	5110038	117.31	0.184
		TOTAL	**7906648**	**181.51**	**0.284**
5A	75	Mohall Loam	1282842	29.45	0.046
	77	Mohall Clay Loam	3951936	90.72	0.142
		TOTAL	**5234778**	**120.17**	**0.188**
5B	78	Mohall Clay Loam Calcareous Solum	181128	4.16	0.007
	75	Mohall Loam	102907	2.36	0.004
	77	Mohall Clay Loam	3822545	87.75	0.136
	79	Mohall Clay	251356	5.77	0.009
		TOTAL	**4357936**	**100.04**	**0.156**
6A	75	Mohall Loam	2527073	58.01	0.090
	77	Mohall Clay Loam	828068	19.01	0.030
		TOTAL	**3355141**	**77.02**	**0.120**
6B	75	Mohall Loam	967825	22.22	0.035
	78	Mohall Clay Loam Calcareous Solum	1885566	43.29	0.068
	77	Mohall Clay Loam	12352	0.28	0.0004
		TOTAL	**2865743**	**65.79**	**0.103**
7A	77	Mohall Clay Loam	1847591	42.41	0.066
	79	Mohall Clay	1777536	40.81	0.064
	112	Tremant Gravelly Sandy Loams	27843	0.64	0.001
		TOTAL	**3652970**	**83.86**	**0.131**
7B	75	Mohall Loam	259093	5.95	0.009
	50	Estrella Loam	825316	18.95	0.030
	77	Mohall Clay Loam	3130380	71.86	0.112
		TOTAL	**4214789**	**96.76**	**0.151**
7C	50	Estrella Loam	353461	8.11	0.013
	75	Mohall Loam	1309149	30.05	0.047
	77	Mohall Clay Loam	452950	10.40	0.016
	78	Mohall Clay Loam, Calcareous Solum	1043150	23.96	0.037
		TOTAL	**3158710**	**72.52**	**0.113**
8	75	Mohall Loam	7222583	165.81	0.259
	50	Estrella Loams	2011155	46.17	0.072
	77	Mohall Clay Loam	4648080	106.70	0.167
	78	Mohall Clay Loam, Calcareous Solum	274476	6.30	0.010
	1	Antho Sandy Loams	8311	0.19	0.0003
	112	Tremant Gravelly Sandy Loams	1978116	45.41	0.071
		TOTAL	**16142721**	**370.59**	**0.579**
9	75	Mohall Loam	1749803	40.18	0.063
	78	Mohall Clay Loam, Calcareous Solum	468434	10.75	0.017
	112	Tremant Gravelly Sandy Loams	391661	8.99	0.014
		TOTAL	**2609898**	**59.92**	**0.094**
10	112	Tremant Gravelly Sandy Loams	288325	6.62	0.010
	77	Mohall Clay Loam	3839250	88.14	0.138
	2	Antho Gravelly Sandy Loams	330619	7.59	0.012
	50	Estrella Loams	1090926	25.04	0.039
	115	Tremant-Antho Complex, 1% to 5% slopes	8070	0.19	0.0003
	1	Antho Sandy Loams	791527	18.17	0.028
		TOTAL	**6348717**	**145.75**	**0.227**
11A	55	Gilman Loams	79273	1.82	0.003
	112	Tremant Gravelly Sandy Loams	2093514	48.06	0.075
		TOTAL	**2172787**	**49.88**	**0.078**
11B	55	Gilman Loams	8498	0.20	0.000
	75	Mohall Loam	3314275	76.09	0.119
	112	Tremant Gravelly Sandy Loams	2778453	63.77	0.100
		TOTAL	**6101226**	**140.06**	**0.219**
12A	50	Estrella Loam	77012	1.77	0.003
	77	Mohall Clay Loam	800554	18.38	0.029
	79	Mohall Clay	1944511	44.64	0.069
	112	Tremant Gravelly Sandy Loams	442179	10.15	0.016
		TOTAL	**3264256**	**74.94**	**0.117**
12B	50	Estrella Loam	1583409	36.35	0.057
	75	Mohall Loam	511211	11.74	0.019
	77	Mohall Clay Loam	329088	7.55	0.011
		TOTAL	**2423708**	**55.64**	**0.087**
12C	75	Mohall Loam	2097850	48.16	0.075
	50	Estrella Loams	611	0.01	0.000
		TOTAL	**2097850**	**48.16**	**0.075**

Sub-Basin ID	Soil Id	Soil Type	Area (acres)	Area (sq. mi.)
13	75	Mohall Loam	77.42	0.121
		TOTAL	**77.42**	**0.121**
14	50	Estrella Loams	10.93	0.017
	75	Mohall Loam	21.45	0.034
	77	Mohall Clay Loam	10.30	0.016
	112	Tremant Gravelly Sandy Loams	31.90	0.050
		TOTAL	**74.58**	**0.117**
16	112	Tramant Gravelly Sandy Loams	10.76	0.017
	50	Estrella Loams	0.16	0.0003
	2	Mohall Loam	12.11	0.019
	78	Mohall Clay Loam	40.04	0.063
		TOTAL	**63.07**	**0.099**
17	112	Tremant Gravelly Sandy Loams	81.20	0.128
	55	Gilman Loams	7.32	0.011
	2	Antho Gravelly Sandy Loams	1.46	0.002
		TOTAL	**89.98**	**0.141**
18	115	Tramant-Antho Complex , 1% to 5% slopes	12.71	0.020
	2	Antho Gravelly Sandy Loams	18.77	0.029
	50	Estrella Loams	78.35	0.122
	1	Antho Sandy Loams	4.39	0.007
	78	Mohall Clay Loam, Calcareous Solum	48.50	0.076
	77	Mohall Clay Loam	30.10	0.047
	112	Tremant Gravelly Sandy Loams	11.99	0.019
		TOTAL	**204.81**	**0.320**
73A	N/A	No Data Available	606.08	0.947
		TOTAL	**606.08**	**0.947**
73B	1	Antho Sandy Loams	73.75	0.115
	50	Estrella Loams	10.61	0.017
	55	Gilman Loams	15.78	0.025
	75	Mohall Loam	62.59	0.098
	77	Mohall Clay Loam	80.28	0.125
	112	Tremant Gravelly Sandy Loams	29.14	0.046
		TOTAL	**272.15**	**0.426**
73C	1	Antho Sandy Loams	76.01	0.119
	50	Estrella Loams	85.37	0.133
	75	Mohall Loam	128.81	0.201
	77	Mohall Clay Loam	84.25	0.132
		TOTAL	**374.44**	**0.585**
74A	N/A	No Data Available	482.56	0.754
		TOTAL	**482.56**	**0.754**
74B	1	Antho Sandy Loams	112.04	0.175
	77	Mohall Clay Loam	97.34	0.152
	112	Tremant Gravelly Sandy Loams	3.62	0.006
		TOTAL	**213.00**	**0.333**
74C	1	Antho Sandy Loams	55.57	0.087
	50	Estrella Loams	11.47	0.018
	77	Mohall Clay Loam	136.29	0.213
	112	Tremant Gravelly Sandy Loams	16.76	0.026
	115	Tremant-Antho Complex, 1-5 %Slopes	0.44	0.001
		TOTAL	**220.53**	**0.345**
19	77	Mohall Clay Loam	35.77	0.056
	22	Contine Clay Loam	9.48	0.015
	50	Estrella Loams	4.07	0.006
	78	Mohall Clay Loam, Calcareous Solum	37.31	0.058
	112	Tremant Gravelly Sandy Loams	1.88	0.003
		TOTAL	**88.51**	**0.138**
20	22	Contine Clay Loam	115.12	0.181
	78	Mohall Clay Loam, Calcareous Solum	0.07	0.0001
	77	Mohall Clay Loam	11.71	0.018
	112	Tremant Gravelly Sandy Loams	45.60	0.071
		TOTAL	**172.50**	**0.270**
23	50	Estrella Loams	40.58	0.063
	55	Gilman Loams	9.09	0.014
	77	Mohall Clay Loam	66.95	0.105
	112	Tremant Gravelly Sandy Loams	23.20	0.036
		TOTAL	**139.82**	**0.218**
24	77	Mohall Clay Loam	103.31	0.161
	79	Mohall Clay	37.93	0.059
	79	Mohall Clay	37.93	0.059
	112	Tremant Gravelly Sandy Loams	20.18	0.032
		TOTAL	**199.35**	**0.311**
25	50	Estrella Loams	87.80	0.137
	55	Gilman Loams	2.13	0.003
	76	Mohall Loam, Calcareous Solum	4.52	0.007
	77	Mohall Clay Loam	14.50	0.023
	112	Tremant Gravelly Sandy Loams	24.08	0.038
		TOTAL	**133.03**	**0.208**

Sub-Basin ID	Soil Id	Soil Type	Area (acres)	Area (sq. mi.)
26	50	Estrella Loams	2.87	0.004
	77	Mohall Clay Loam	6.53	0.010
	112	Tremant Gravelly Sandy Loams	19.63	0.031
		TOTAL	**29.03**	**0.05**
77A	N/A	No Data Available	1112.96	1.739
		TOTAL	**1112.96**	**1.739**
77B	1	Antho Sandy Loams	76.92	0.120
	77	Mohall Clay Loam	81.39	0.127
	112	Tremant Gravelly Sandy Loams	65.29	0.102
		TOTAL	**223.60**	**0.349**
77C	1	Antho Sandy Loams	4.48	0.007
	78	Mohall Clay Loam, Calcareous Solum	8.70	0.014
	112	Tremant Gravelly Sandy Loams	92.80	0.145
	115	Tremant-Antho Complex, 1-5 %Slopes	0.11	0.0002
	77	Mohall Clay Loam	72.26	0.1129
		TOTAL	**178.35**	**0.279**
78A	N/A	No Data Available	1204.48	1.882
		TOTAL	**1204.48**	**1.882**
78B	77	Mohall Clay Loam	76.66	0.120
	22	Contine Clay Loam	69.61	0.109
	112	Tremant Gravelly Sandy Loams	107.33	0.168
		TOTAL	**253.60**	**0.397**
78C	22	Contine Clay Loam	128.67	0.201
	77	Mohall Clay Loam	2.76	0.004
	112	Tremant Gravelly Sandy Loams	52.65	0.082
		TOTAL	**184.08**	**0.287**
68A1	50	Estrella Loams	55.97	0.087
	55	Gillman Loams	57.12	0.089
	112	Tremant Gravelly Sandy Loams	16.74	0.026
		TOTAL	**129.83**	**0.20**
68A2	50	Estrella Loams	18.01	0.028
	55	Gillman Loams	12.43	0.019
	77	Mohall Clay Loam	60.54	0.095
	112	Tremant Gravelly Sandy Loams	16.74	0.026
		TOTAL	**107.72**	**0.168**
68A2	50	Estrella Loams	18.01	0.028
	55	Gillman Loams	12.43	0.019
	77	Mohall Clay Loam	0.24	0.000
		TOTAL	**30.68**	**0.047**
68B1	50	Estrella Loams	20.88	0.033
	55	Gillman Loams	1.03	0.002
	77	Mohall Clay Loam	15.92	0.025
	112	Tremant Gravelly Sandy Loams	55.79	0.087
		TOTAL	**93.62**	**0.147**
68B2	50	Estrella Loams	23.20	0.036
	77	Mohall Clay Loam	15.41	0.024
		TOTAL	**38.61**	**0.060**
68B3	50	Estrella Loams	20.18	0.032
	77	Mohall Clay Loam	2.54	0.004
		TOTAL	**22.72**	**0.036**
70A1	50	Estrella Loams	17.94	0.028
	77	Mohall Clay Loam	10.54	0.016
	112	Tremant Gravelly Sandy Loams	5.75	0.009
		TOTAL	**34.23**	**0.053**
70A2	77	Mohall Clay Loam	20.26	0.032
	112	Tremant Gravelly Sandy Loams	2.58	0.004
		TOTAL	**22.84**	**0.036**
79A	2	Antho Gravelly Sandy Loams	2.95	0.0046
	22	Contine Clay Loam	197.30	0.3083
	76	Mohall Loam, Calcareous Solum	5.65	0.0088
	77	Mohall Clay Loam	60.05	0.0938
	78	Mohall Clay Loam, Calcareous Solum	223.12	0.3496
	112	Tremant Gravelly Sandy Loams	149.83	0.2341
		TOTAL	**638.90**	**0.999**

Post Developed HEC-1 Land Use Data

Table 8 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	Parcel(s) within DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
1	8,335,456	191.4	0.2991	DU5E	DU-5E NORTH, DU-5E2	153.8	Industrial	6,699,528	153.8	0.2403	0.040
				DU5E	DU-5E1, DU-5E2	4.0	Active Open Space	174,240	4.0	0.0063	0.050
				DU5E	DU-5E1	25.0	Very High Density Residential (>15 DU/Acre)	1,089,000	25.0	0.0391	0.025
				---	---	8.6	General Transportation	374,616	8.6	0.0134	0.035
2B	6,494,934	149.1	0.2330	DU6N	DU-6A	86.5	Industrial	3,767,940	86.5	0.1352	0.040
				DU6N	DU-6B	50.7	Industrial	2,208,492	50.7	0.0792	0.040
				---	---	11.9	General Transportation	518,364	11.9	0.0186	0.035
2C	6,751,871	155.0	0.2422	DU6N	DU-6C	67.3	Industrial	2,931,588	67.3	0.1052	0.040
				DU6S	DU-6D	79.9	Medium Lot Residential (2-4 DU/Acre)	3,480,444	79.9	0.1248	0.045
				---	---	7.8	Active Open Space	339,768	7.8	0.0122	0.050
3	7,090,662	162.8	0.2544	DU5E	DU-5A	25.0	Industrial	1,089,000	25.0	0.0391	0.040
				DU5E	DU-5B	47.4	Industrial	2,064,744	47.4	0.0741	0.040
				DU 1-2-5W	DU 1-2-	54.3	Industrial	2,365,308	54.3	0.0848	0.040
					DU 1-2-	14.7	Active Open Space	640,332	14.7	0.0230	0.050
					DU 1-2-	5.0	Passive Open Space	217,800	5.0	0.0078	0.050
				---	---	16.4	General Transportation	714,384	16.4	0.0256	0.035
4	7,906,648	181.5	0.2836	DU1	DU-1-2-5W	134.9	Industrial	5,876,244	134.9	0.2108	0.040
						38.4	Active Open Space	1,672,704	38.4	0.0600	0.050
						8.2	General Transportation	357,192	8.2	0.0128	0.035
5A	5,234,676	120.2	0.1878	DU 6S	6-4,6-5	34.8	Small Lot Residential (4-6 DU/Acre)	1,363,428	31.3	0.0489	0.040
							General Transportation	152,460	3.5	0.0055	0.035
					6-6	18.9	Small Lot Residential (4-6 DU/Acre)	779,724	17.9	0.0280	0.040
							Active Open Space	43,560	1.0	0.0016	0.050
					6-9, 6-17	24.9	Small Lot Residential (4-6 DU/Acre)	1,084,644	24.9	0.0389	0.040
					6-13 to 6-15	9.3	Medium Lot Residential (2-4 DU/Acre)	404,565	9.3	0.0145	0.045
					6-16, 6-18	9.0	Medium Lot Residential (2-4 DU/Acre)	390,816	9.0	0.0141	0.045
					6-19 to 6-23	21.5	Medium Lot Residential (2-4 DU/Acre)	935,699	21.5	0.0336	0.045
					--	1.8	Active Open Space	78,408	1.8	0.0028	0.050
5B	4,357,936	100.0	0.1563	DU 6S	6-13 to 6-15	17.7	Medium Lot Residential (2-4 DU/Acre)	771,012	17.7	0.0277	0.045
					6-16, 6-18	27.7	Medium Lot Residential (2-4 DU/Acre)	1,206,612	27.7	0.0433	0.045
					6-19 to 6-23	54.6	Medium Lot Residential (2-4 DU/Acre)	2,234,628	51.3	0.0802	0.045
							Active Open Space	143,748	3.3	0.0052	0.050
6A	3,355,141	77.0	0.1203	DU 6S	6-1/2	31.0	Medium Lot Residential (2-4 DU/Acre)	1,350,360	31.0	0.0484	0.045
					6-7	19.6	Medium Lot Residential (2-4 DU/Acre)	853,776	19.6	0.0306	0.045
					6-8	26.4	Large Lot Residential (1-2 DU/Acre)	1,149,984	26.4	0.0413	0.045

Table 8 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	Parcel(s) within DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
6B	2,865,742	65.8	0.1028	DU 6S	6-10 to 6-12	65.1	Medium Lot Residential (2-4 DU/Acre)	1,825,164	41.9	0.0655	0.045
					6-13 to 6-15		Small Lot Residential (4-6 DU/Acre)	1,010,592	23.2	0.0363	0.040
					---	0.7	General Transportation	30,492	0.7	0.0011	0.035
7A	3,652,969	83.9	0.1311	DU 1-2-5W	DU 1-2-5W	37.3	Industrial	1,624,788	37.3	0.0583	0.040
					DU 1-2-5W	46.6	Active Open Space	2,029,896	46.6	0.0728	0.050
7B	4,214,789	96.8	0.1513	DU 3/4	3/4-8	10.5	Small Lot Residential (4-6 DU/Acre)	457,380	10.5	0.0164	0.040
					3/4-9	10.7	Small Lot Residential (4-6 DU/Acre)	466,092	10.7	0.0167	0.040
					3/4-10	12.2	Medium Lot Residential (2-4 DU/Acre)	531,432	12.2	0.0191	0.045
					3/4-11	11.8	Medium Lot Residential (2-4 DU/Acre)	514,008	11.8	0.0184	0.045
					3/4-12	13.0	Medium Lot Residential (2-4 DU/Acre)	566,280	13.0	0.0203	0.045
					3/4-13	12.0	Medium Lot Residential (2-4 DU/Acre)	522,720	12.0	0.0188	0.045
					3/4-19 to 3/4-22	13.2	Active Open Space	574,992	13.2	0.0206	0.050
					--	13.4	General Transportation	583,704	13.4	0.0209	0.035
7C	3,158,912	72.5	0.1133	DU 3/4	3/4-13	1.4	Medium Lot Residential (2-4 DU/Acre)	60,984	1.4	0.0022	0.045
					3/4-14 to 3/4-17	46.9	Small Lot Residential (4-6 DU/Acre)	2,042,964	46.9	0.0733	0.040
					3/4-18	10.2	High Density Residential (10-15 Du/Acre)	444,312	10.2	0.0159	0.030
					3/4-19 to 3/4-22	12.9	Active Open Space	561,924	12.9	0.0202	0.050
					--	1.1	General Transportation	47,916	1.1	0.0017	0.035
8	16,142,721	370.6	0.5791	DU6S	Parcel 6-3	16.9	General Commercial	736,164	16.9	0.0264	0.035
				DU7	Parcels 7-1 through 7-21	347.3	Medium Lot Residential (2-4 DU/Acre)	9,147,600	173.7	0.2714	0.045
							Small Lot Residential (4-6 DU/Acre)	7,130,772	163.7	0.2558	0.040
							Institutional	304,920	7.0	0.0109	0.040
							Active Open Space	126,324	2.9	0.0045	0.050
				---	---	6.4	General Transportation	278,784	6.4	0.0100	0.035
9	2,609,899	59.9	0.0936	DU7	7-50	5.0	Educational	217,800	5.0	0.0078	0.055
					7-51	6	Educational	871,200	6.0	0.0094	0.055
					7-52 & 7-54	34.8	Active Open Space	1,515,888	34.8	0.0544	0.050
					7-53	14.1	High Density Residential (10-15 Du/Acre)	614,196	14.1	0.0220	0.030

Table 8 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	Parcel(s) within DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
10	6,348,717	145.7	0.2277	DU7	7-1	15.9	Small Lot Residential (4-6 DU/Acre)	692,604	15.9	0.0248	0.040
					7-2	19.3	Medium Lot Residential (2-4 DU/Acre)	840,708	19.3	0.0302	0.045
					7-3	30.7	Medium Lot Residential (2-4 DU/Acre)	1,337,292	30.7	0.0480	0.045
					7-4	31.6	Medium Lot Residential (2-4 DU/Acre)	1,376,496	31.6	0.0494	0.045
					7-5	1.5	Medium Lot Residential (2-4 DU/Acre)	65,340	1.5	0.0023	0.040
					7-21	14.5	Small Lot Residential (4-6 DU/Acre)	631,620	14.5	0.0227	0.040
						32.3	General Transportation	119,210	32.3	0.0505	0.035
11A	2,172,787	49.9	0.0780	DU3/4	3/4-1 to 3/4-3	4.0	General Transportation	174,240	4.0	0.0063	0.035
					3/4-6	11.5	Educational	500,940	11.5	0.0180	0.055
					7-25	1.7	Institutional	74,052	1.7	0.0027	0.040
				DU7	7-26	5.5	General Commercial	239,580	5.5	0.0086	0.035
					7-52,54	11.9	Active Open Space	518,364	11.9	0.0186	0.050
				---	---	15.3	General Transportation	861,054	15.5	0.0242	0.035
11B	6,101,226	140.1	0.2189	DU3/4	3/4-4	34.0	Small Lot Residential (4-6 DU/Acre)	1,481,040	34.0	0.0531	0.040
					3/4-6	49.6	Educational	2,147,508	49.3	0.0770	0.055
					3/4-7	5.5	General Commercial	239,580	5.5	0.0086	0.035
					3/4-1 to 3/4-3	40.0	Medium Density Residential (5-10 DU/Acre)	1,742,400	40.0	0.0625	0.035
						11.0	High Density Residential (10-15 Du/Acre)	479,160	11.0	0.0172	0.030
12A	3,264,256	74.9	0.1170	DU1-2-5W	DU-1-2-	51.9	Active Open Space	2,260,764	51.9	0.0811	0.050
				DU3/4	3/4-34	16.6	Very High Density Residential (>15 DU/Acre)	723,096	16.6	0.0259	0.025
						1.6	General Commercial	69,696	1.6	0.0025	0.035
				--	--	4.8	General Transportation	209,088	4.8	0.0075	0.035
12B	2,423,721	55.6	0.0869	DU3/4	3/4-28	16.0	Medium Density Residential (5-10 DU/Acre)	696,960	16.0	0.0250	0.035
					3/4-29	22.4	Medium Density Residential (5-10 DU/Acre)	975,744	22.4	0.0350	0.035
					3/4-30	17.2	Medium Density Residential (5-10 DU/Acre)	749,232	17.2	0.0269	0.035
12C	2,098,178	48.2	0.0753	DU3/4	3/4-10B	6.7	General Commercial	291,852	6.7	0.0105	0.035
						12.0	Very High Density Residential (>15 DU/Acre)	522,720	12.0	0.0188	0.025
					3/4-31	8.4	Small Lot Residential (4-6 DU/Acre)	365,904	8.4	0.0131	0.040
					3/4-32	14.2	Small Lot Residential (4-6 DU/Acre)	618,552	14.2	0.0222	0.040
					3/4-33	6.9	Small Lot Residential (4-6 DU/Acre)	300,564	6.9	0.0108	0.040

Table 8 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	Parcel(s) within DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
13	3,372,581	77.4	0.1209	DU3/4	3/4-23	8.5	Medium Lot Residential (2-4 DU/Acre)	370,260	8.5	0.0133	0.045
					3/4-24	10.9	Medium Lot Residential (2-4 DU/Acre)	474,804	10.9	0.0170	0.045
					3/4-25	11.6	Medium Lot Residential (2-4 DU/Acre)	505,296	11.6	0.0181	0.045
					3/4-26	13.4	Medium Lot Residential (2-4 DU/Acre)	583,704	13.4	0.0209	0.045
					3/4-27	17.9	Medium Lot Residential (2-4 DU/Acre)	779,724	17.9	0.0280	0.045
					3/4-31	1.7	Small Lot Residential (4-6 DU/Acre)	74,052	1.7	0.0027	0.040
					3/4-32	8.5	Small Lot Residential (4-6 DU/Acre)	370,260	8.5	0.0133	0.040
					---	4.9	General Transportation	213,444	4.9	0.0077	0.025
14	3,248,624	74.6	0.1166	DU3/4	3/4-8B	8.5	Very High Density Residential (>15 DU/Acre)	370,260	8.5	0.0133	0.025
					3/4-9A	7.2	General Commercial	313,632	7.2	0.0113	0.035
					3/4-9B	7.4	General Commercial	322,344	7.4	0.0116	0.035
					3/4-9C	2.2	General Commercial	95,832	2.2	0.0034	0.035
					3/4-9D	4.4	General Commercial	191,664	4.4	0.0069	0.035
					3/4-9E	2.1	General Commercial	91,476	2.1	0.0033	0.035
					3/4-9F	6.0	General Commercial	261,360	6.0	0.0094	0.035
					3/4-9G	2.0	General Commercial	87,120	2.0	0.0031	0.035
					3/4-9H	4.7	Very High Density Residential (>15 DU/Acre)	204,732	4.7	0.0073	0.025
					3/4-9J	10.4	Very High Density Residential (>15 DU/Acre)	453,024	10.4	0.0163	0.025
					3/4-9K	3.1	Very High Density Residential (>15 DU/Acre)	135,036	3.1	0.0048	0.025
					3/4-9L	5.9	Very High Density Residential (>15 DU/Acre)	257,004	5.9	0.0092	0.025
					---	10.7	General Transportation	466,092	10.7	0.0167	0.025
73A	26,400,845	606.1	0.9470	---		---	Passive Open Space	26,400,845	606.1	0.9470	0.093
73B	11,854,970	272.2	0.4253	---		---	Small Lot Residential (4-10 DU/Acre)	11,854,970	272.2	0.4253	0.040
73C	16,310,497	374.4	0.5850	---		---	Small Lot Residential (4-10 DU/Acre)	16,310,497	374.4	0.5850	0.040
74A	21,020,314	482.6	0.7541	---		---	Passive Open Space	21,020,314	482.6	0.7541	0.095
74B	9,278,312	213.0	0.3328	---		---	Small Lot Residential (4-10 DU/Acre)	9,278,312	213.0	0.3328	0.040
74C	9,606,165	220.5	0.3445	---		---	Small Lot Residential (4-10 DU/Acre)	9,606,165	220.5	0.3445	0.040
16	3,372,581	77.4	0.1209	DU9	9-1	63.1	Medium Lot Residential (2-4 DU/Acre)	2,491,632	57.2	0.0894	0.045
					---		Active Open Space	135,036	3.1	0.0048	0.050
					----		General Transportation	121,968	2.8	0.0044	0.035
17	3,248,624	74.6	0.1166	DU3S	3S-2	31.0	Medium Lot Residential (2-4 DU/Acre)	1,350,360	31.0	0.0484	0.045
					3S-1, 3S-3	59.0	Small Lot Residential (4-6 DU/Acre)	2,570,040	59.0	0.0922	0.040
18	2,747,312	63.1	0.0986	DU8	8-1 through 8-9	204.8	Medium Lot Residential (2-4 DU/Acre)	6,904,260	158.5	0.2477	0.045
							Large Lot Residential (1-2 DU/Acre)	871,200	20.0	0.0313	0.045
							Active Open Space	927,828	21.3	0.0333	0.050
							General Transportation	217,800	5.0	0.0078	0.035
19	3,855,367	88.5	0.1383	DU9	9-2	25.6	Medium Lot Residential (2-4 DU/Acre)	1,115,136	25.6	0.0400	0.045
					9-3	11.2	Institutional	487,872	11.2	0.0175	0.040
					9-4	40.1	Medium Lot Residential (2-4 DU/Acre)	1,746,756	40.1	0.0627	0.045
					9-6	7.4	Small Lot Residential (4-6 DU/Acre)	322,344	7.4	0.0116	0.040
					---	4.2	General Transportation	182,952	4.2	0.0066	0.035

Table 8 - Post Developed HEC-1 Land Use Data

Description: Land use data based on proposed development

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Sub-Basin ID	Basin Area (sq. ft.)	Basin Area (acres)	Basin Area (sq. mi)	DU	Parcel(s) within DU	DU Area (ac)	Land Use	Land Use Area (sq. ft.)	Land Use Area (acres)	Land Use Area (sq. mi.)	Kn
20	7,514,092	172.5	0.2695	DU8	8-9	18.7	Medium Lot Residential (2-4 DU/Acre)	596,772	13.7	0.0214	0.045
							Active Open Space	108,900	2.5	0.0039	0.050
							General Transportation	108,900	2.5	0.0039	0.035
				DU9	9-4, 9-5, 9-6, 9-7	138.0	Medium Lot Residential (2-4 DU/Acre)	5,523,408	126.8	0.1981	0.045
							Active Open Space	487,872	11.2	0.0175	0.050
				---		15.8	General Transportation	688,248	15.8	0.0247	0.035
23	6,088,253	139.8	0.2184	---	---	---	Office General	5,754,650	132.1	0.2064	0.035
							Active Open Space	333,603	7.7	0.0120	0.050
24	7,031,535	161.4	0.2522	---	---	---	Office General	6,892,233	158.2	0.2472	0.035
							Active Open Space	139,302	3.2	0.0050	0.050
25	5,794,910	133.0	0.2078	---	---	---	Business Park	5,794,910	133.0	0.2078	0.035
26	1,264,710	29.0	0.0453	---	---	---	Business Park	1,264,710	29.0	0.0453	0.035
70A1	1,491,048	34.2	0.0534	---	---	---	General Transportation	1,491,048	34.2	0.0534	0.030
70A2	994,745	22.8	0.0356	---	---	---	General Transportation	994,745	22.8	0.0356	0.030
77A	48,480,538	1113.0	1.7391	---	---	---	Passive Open Space	48,480,538	1113.0	1.7391	0.092
77B	9,740,171	223.6	0.3494	---	---	---	Passive Open Space	3,985,740	91.5	0.1430	0.050
							Medium Lot Residential (2-4 DU/Acre)	5,771,700	132.5	0.2070	0.045
77C	7,769,721	178.4	0.2788	---	---	---	Medium Lot Residential (2-4 DU/Acre)	7,596,864	174.4	0.2725	0.045
							Institutional	174,240	4.0	0.0063	0.040
78A	52,467,149	1204.5	1.8820	---	---	---	Passive Open Space	52,467,149	1204.5	1.8820	0.090
78B	11,047,090	253.6	0.3963	---	---	---	Large Lot Residential (1-2 DU/Acre)	11,038,104	253.4	0.3960	0.050
78C	8,018,731	184.1	0.2877	---	---	---	Passive Open Space	344,124	7.9	0.0123	0.050
							Medium Lot Residential (2-4 DU/Acre)	5,383,370	123.6	0.1931	0.045
							Large Lot Residential (1-2 DU/Acre)	2,290,155	52.6	0.0822	0.045
79A	27,835,085	639.0	0.9984	---	---	---	Other Employment - Low	8,267,671	189.8	0.2966	0.090
							General Transportation	550,668	12.6	0.0197	0.035
							General Commercial	3,689,874	84.7	0.1323	0.035
							Institutional	653,398	15.0	0.0234	0.040
							Medium Lot Residential (2-4 DU/Acre)	14,675,364	336.9	0.5264	0.045
68A1	8,293,239	190.4	0.2975	---	---	---	Regional Commercial	8,293,239	190.4	0.2975	0.087
68A2	1,336,285	30.7	0.0480	---	---	---	Regional Commercial	1,336,285	30.7	0.0480	0.087
68B1	4,078,185	93.6	0.1463	---	---	---	Regional Commercial	4,078,185	93.6	0.1463	0.090
68B2	1,681,764	38.6	0.0603	---	---	---	Regional Commercial	1,681,764	38.6	0.0603	0.090
68B3	989,689	22.7	0.0355	---	---	---	Regional Commercial	989,689	22.7	0.0355	0.090

Post Developed HEC-1 Routing Data

Table 9 - Post Developed HEC-1 Routing Data

Description: Routing parameters based on proposed channels and drainage corridors

Location Eastmark - East Mesa, Arizona

Reference: DDMSW Version 5.3.0

Routing ID	N-Steps	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*
10BT75	7	Normal Depth	0.030	0.013	0.030	10500	0.0038	0.0	15.0	16.5	25.0	33.0	41.5	43.0	58.0	6.60	6.60	5.60	0.00	0.00	5.60	6.60	6.60
10T75	7	Normal Depth	0.030	0.015	0.030	6300	0.0060	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
2BT2	12	Normal Depth	0.032	0.032	0.032	990	0.0031	0.0	1.0	2.0	3.0	2003.0	2004.0	2005.0	2006.0	1.00	0.75	0.50	0.00	0.00	0.50	0.75	1.00
2T1	6	Normal Depth	0.035	0.035	0.035	3031	0.0040	0.0	2.0	4.0	8.0	42.0	46.0	48.0	50.0	2.00	1.50	1.00	0.00	0.00	1.00	1.50	2.00
1T3	3	Normal Depth	0.035	0.035	0.035	2548	0.0051	0.0	2.0	4.0	8.0	42.0	46.0	48.0	50.0	2.00	1.50	1.00	0.00	0.00	1.00	1.50	2.00
3T7A	4	Normal Depth	0.030	0.015	0.030	3854	0.0033	0.0	7.5	8.0	38.0	43.0	73.0	73.5	81.0	0.80	0.50	0.00	0.60	0.60	0.00	0.50	0.80
5BT7A	2	Normal Depth	0.030	0.015	0.030	2155	0.0040	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
7AT12	1	Normal Depth	0.030	0.015	0.030	1540	0.0040	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
7CT7B	1	Normal Depth	0.035	0.035	0.035	618	0.0030	0.0	1.0	20.0	24.0	198.0	202.0	222.0	235.0	6.00	5.00	1.00	0.00	0.00	1.00	5.00	6.00
7CT13	5	Normal Depth	0.030	0.015	0.030	3109	0.0050	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
6AT1	19	Normal Depth	0.030	0.015	0.030	3600	0.0011	0.0	17.0	23.0	28.5	46.5	65.5	71.0	84.0	1.07	0.90	0.90	0.00	1.15	0.00	0.90	1.78
6BT7C	1	Normal Depth	0.030	0.015	0.030	1001	0.0060	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
8T6B	2	Normal Depth	0.030	0.015	0.030	2604	0.0047	0.0	17.0	23.0	28.5	46.5	65.5	71.0	84.0	1.10	0.90	0.90	0.00	1.15	0.00	0.90	1.78
11BT13	4	Normal Depth	0.030	0.015	0.030	1262	0.0050	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
11AT75	5	Normal Depth	0.030	0.015	0.030	1855	0.0051	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	1.00	0.50	0.00	0.80	0.80	0.00	0.50	1.00
12T12C	2	Normal Depth	0.030	0.015	0.030	2600	0.0014	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	2.00	1.00	0.50	0.00	0.00	0.50	1.00	2.00
2BT12C	4	Normal Depth	0.030	0.015	0.030	1416	0.0014	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	2.00	1.00	0.50	0.00	0.00	0.50	1.00	2.00
13T75	1	Normal Depth	0.030	0.015	0.030	1230	0.0016	0.0	17.5	18.0	57.0	73.0	112.0	112.5	130.0	2.00	1.00	0.50	0.00	0.00	0.50	1.00	2.00
18T19	1	Normal Depth	0.030	0.015	0.030	1040	0.0040	0.0	7.5	8.0	38.0	43.0	73.0	73.5	81.0	0.80	0.50	0.00	0.60	0.60	0.00	0.50	0.80
77CT78	4	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
78CT79	2	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

Onsite Retention Volume Summary

Table 10 - 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 100-yr, 24-hr
Rainfall, D: 2.19 inches 3.51 inches

Calc. Values: V = DAC
Where: V = Retention Volume Required
D = Depth of Rainfall (ft)
A = Area of Watershed Contributing
C = Runoff Coefficient

Retention Basin	Retention Location	Sub-basin		Development Unit		Weighted "C_{100}"	Required Storm Event Retention	Volume Required (acre-feet)	Total Volume Required (acre-feet)	Volume Provided (acre-feet)	Total Volume Provided (acre-feet)	Modeled HEC-1 Retention Volume (acre-feet)
		Contributing Sub-basin	Contributing Sub-basin Area (acres)	Contributing DUs	DU Area Within Sub-basin (acres)							
RET01	DU 5E	1	191.4	DU-5E NORTH, DU-5E2	153.8	0.89	100-Year, 24-Hour	49.81	49.81	--	--	49.81
				DU-5E1, DU-5E2	4.0							
				---	8.6							
RET02B[1]	DU 6N	2B	149.1	DU-6A	86.5	0.90	100-Year, 2-Hour	24.49	24.49	14.45	14.45	24.49
				DU-6B	50.7					--		
				---	11.9					--		
RET02C	DU 6N	02C	155.0	DU-6C	67.3	0.76	100-Year, 24-Hour	34.46	34.46	--	--	34.46
					79.9					--		
				---	7.8							
RET03	DU 5E DU 1-2-5W	3	162.8	DU-5A	25	0.87	100-Year, 24-Hour	41.42	41.42	5.69	5.69	41.42
				DU-5B	47.4					--		
				DU 1-2-5W	54.3					--		
				DU 1-2-5W	14.7					--		
				DU 1-2-5W	5.0							
				---	16.4					--		
RET04	DU 1-2-5W	4	181.5	DU-1-2-5W	134.9	0.90	100-Year, 2-Hour	28.16	28.16	--	--	28.16
					38.4	0.65				--		
					8.2	0.90				--		
RET05A	DU 6S	5A	120.2	6-4,6-5	34.8	0.77	100-Year, 2-Hour	4.89	15.83	14.25	14.25	14.25
				6-6	18.9	0.74		2.56				
				6-9, 6-17	24.9	0.69		8.38				
				6-13 to 6-15	9.3							
				6-16, 6-18	9.0							
				6-19 to 6-23	21.5							
				--	1.8							
RET05B	DU 6S	5B	100.0	6-13 to 6-15	45.4	0.65	100-Year, 2-Hour	11.48	11.86	11.53	11.53	11.53
				6-19 to 6-23	54.6							
				--		0.65		0.38		--		
RET06A[3]	DU 6S	6A	77.0	6-1/2	77.0	0.65	100-Year, 2-Hour	9.14	9.14	10.28	10.28	10.28
				6-7								
				6-8								
RET06B	DU 6S	6B	65.8	6-10 to 6-12	41.9	0.69	100-Year, 2-Hour	8.29	8.29	7.32	7.32	7.32
				6-13 to 6-15	23.2							
				---	0.7							
RET07A	DU 1-2-5W	7A	83.9	DU 1-2-5W	83.9	0.76	100-Year, 24-Hour	18.66	18.66	0.0	0.0	18.66
RET07B[5]	DU 3/4	7B	96.8	3/4-8 to 3/4-13	70.2	0.71	100-Year, 24-Hour	20.09	20.09	19.43	19.43	19.43
				3/4-19 to 3/4-22	13.2							
				--	13.4							
RET07C[5]	DU 3/4	7C	72.5	3/4-13	1.40	0.75	100-Year, 24-Hour	15.91	15.91	15.70	15.70	15.70
				3/4-14 to 3/4-17	46.90							
				3/4-18	10.20							
				3/4-19 to 3/4-22	12.90							
				--	1.10							
RET08[2]	DU 6S DU 7	8	370.6	Parcel 6-3	16.9	0.90	100-Year, 2-Hour	2.77	48.20	2.80	46.56	46.56
				Parcels 7-1 through 7-21	347.3	0.70		44.37		43.76		
				---	6.4	0.90		1.06				
RET09 [4]	DU 7	9	59.9	7-50	5.0	0.80	100-Year, 2-Hour	0.73	10.41	5.72	5.72	7.91
				7-51	6.0	0.80	100-Year, 2-Hour	0.88				
				7-52 & 7-54	34.8	0.65	100-Year, 24-Hour	6.61				
				7-53	14.1	0.85	100-Year, 2-Hour	2.19				
RET10[2]	DU 7	10	145.7	7-1	15.9	0.73	100-Year, 2-Hour	19.42	19.42	14.88	17.15	17.15
				7-2	19.3							
				7-3	30.7							
				7-4	31.6							
				7-5	1.5							
				7-21	14.5							
				--	32.3					2.27		
RET11A	DU 3/4	11A	49.9	3/4-1 to 3/4-3	4.0	0.90	100-Year, 2-Hour	0.66	7.48	1.00	8.03	8.03
				3/4-6	11.5	0.80		1.68				
				7-25	1.7	0.85		0.26		1.60		
				7-26	5.5	0.90		0.91				
				7-52,54	11.9	0.65		1.41		5.43		
				---	15.3	0.90		2.56				
RET11B	DU 3/4	11B	140.1	3/4-4	34.0	0.75	100-Year, 2-Hour	4.65	19.95	20.01	20.01	20.01
				3/4-6	49.3	0.80		7.19				
				3/4-7	5.5	0.90		0.91				
				3/4-1 to 3/4-3	40.0	0.75		5.48				
				--	11.0	0.85		1.72				

Table 10 - 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 100-yr, 24-hr
Rainfall, D: 2.19 inches 3.51 inches

Calc. Values: V = DAC
Where: V = Retention Volume Required
D = Depth of Rainfall (ft)
A = Area of Watershed Contributing
C = Runoff Coefficient

Retention Basin	Retention Location	Sub-basin		Development Unit		Weighted "C_{100}"	Required Storm Event Retention	Volume Required (acre-feet)	Total Volume Required (acre-feet)	Volume Provided (acre-feet)	Total Volume Provided (acre-feet)	Modeled HEC-1 Retention Volume (acre-feet)
		Contributing Sub-basin	Contributing Sub-basin Area (acres)	Contributing DUs	DU Area Within Sub-basin (acres)							
RET12A	DU 3/4 DU 1-2-5W	12A	74.9	DU-1-2-5W	51.90	0.65	100-Year, 2-Hour	6.15	9.92	--	--	9.92
				3/4-34	16.6	0.90		2.99		--		
				--	4.8	0.90		0.78		--		
RET12B	DU 3/4	12B	55.6	3/4-28	16	16.00	100-Year, 2-Hour	7.61	7.61	0.00	0.00	7.61
				3/4-29	22.4	22.40						
				3/4-30	17.2	17.20						
RET12C	DU 3/4	12C	48.2	3/4-10B	6.7	6.70	100-Year, 2-Hour	7.12	7.12	4.83	4.83	7.12
				3/4-31	8.4	8.40						
				3/4-32	14.2	14.20						
				3/4-33	6.9	6.90						
RET13	DU 3/4	13	77.4	3/4-23	8.5	8.50	100-Year, 2-Hour	10.17	10.17	13.96	13.96	13.96
				3/4-24	10.9	10.90						
				3/4-25	11.6	11.60						
				3/4-26	13.4	13.40						
				3/4-27	17.9	17.90						
				3/4-31	1.7	1.70						
				3/4-32	8.5	8.50						
				---	4.9	4.90						
RET14	DU 3/4	14	74.6	3/4-8B	8.5	8.50	100-Year, 2-Hour	12.25	12.25	0.93	0.93	12.25
				3/4-9A	7.2	7.20						
				3/4-9B	7.4	7.40						
				3/4-9C	2.2	2.20						
				3/4-9D	4.4	4.40						
				3/4-9E	2.1	2.10						
				3/4-9F	6	6.00						
				3/4-9G	2	2.00						
				3/4-9H	4.7	4.70						
				3/4-9J	10.4	10.40						
				3/4-9K	3.1	3.10						
				3/4-9L	5.9	5.90						
				---	10.7	10.70						
							Total	**430.65**	**430.65**	**215.84**	**215.84**	**426.03** **ac-ft**

1. Retention provided volume for RET02B was taken from the First Solar Final Drainage Report, where only approximately half of 2B is developed.
2. Retention provided volumes for RET08 and RET10 were taken from DU7 and Ray Road Final Drainage Reports and improvement plans.
3. Retention provided volumes for RET06A was taken from DU6 South Final Drainage Reports and improvement plans.
4. Required Retention for RET09 was determined to be the 100-year, 24 hour volume except for the existing Basis and Sequoia Pathfinder Acadamy schools and the existing daycare. The total acreage for these three existing developments within Subbasin 9 is approximately 11 Acres. Thus, the required retention for RET09 includes 100-year, 24 hour volume for the Great Park and the New Home Company Site located at the southwest corner of Eastmark Parkway and Point Twenty-Two Boulevard.
5. Within the approved *Final Drainage Report for Eastmark DU 3/4 North-Phases 2 & 3* , a portion of the retention required within Sub-basins 7B and 7C was determined from the 100-year, 24-hour storm event and the 100-year, 2-hour storm event based upon previous approved master plan reports. Because of the freeboard provided in the retention basins, the actual retention provided is nearly the 100-year, 24-hour storm event volume. Thus, for this table, the required retention is shown as the volume from the 100-year, 24-hour storm event.

Retention Basin	Retention Location	Sub-basin		Development Unit		Weighted "C_{100}"	Required Storm Event Retention	Volume Required (acre-feet)	Total Volume Required (acre-feet)	Volume Provided (acre-feet)	Total Volume Provided (acre-feet)	Modeled HEC-1 Retention Volume (acre-feet)
		Contributing Sub-basin	Contributing Sub-basin Area (acres)	Contributing DUs	DU Area Within Sub-basin (acres)							
RET16	DU 9	16	77.4	DU9	63.1	0.66	100-Year, 2-Hour	7.60	7.60	--	--	7.60
RET17 [6]	DU 3S	17	74.6	3S-2	31.0	0.72	100-Year, 2-Hour	11.80	11.80	12.74	12.74	12.74
				3S-1, 3S-3	59.0							
RET18	DU 8	18	63.1	8-1 through 8-9	204.8	0.66	100-Year, 2-Hour	24.70	24.70	--	--	24.70
RET19[7]	DU 9	19	88.5	9-2	25.6	0.70	100-Year, 2-Hour	11.30	11.30	9.92	9.92	11.30
				9-3	11.2							
				9-4	40.1							
				9-6	7.4							
				---	4.2							
RET20[7]	DU 8 DU 9	20	172.5	8-9	18.7	0.68	100-Year, 2-Hour	2.30	21.30	--	25.76	25.76
				9-4, 9-5, 9-6, 9-7	138.0	0.65		16.40		25.76		
				---	15.8	0.90		2.60				
							Total	**76.70**	**76.70**	**48.42**	**48.42**	**82.10** **ac-ft**

6. Retention provided volumes for RET17 was taken from DU3 South Final Drainage Reports and improvement plans.
7. Retention provided volumes for RET19 and RET20 were taken from DU9 Final Drainage Reports and improvement plans.

Eastmark Required Retention Total =	**507.4**	**ac-ft**
Current Eastmark Provided Retention Total =	**264.3**	**ac-ft**
Current Eastmark Modeled Retention Total =	**508.1**	**ac-ft**

Offsite Retention Updates for HEC-1

Table 11 - Post Developed Condition HEC-1 - Offsite Retention Updates

Description: Retention provided by existing developments

Location Eastmark - East Mesa, Arizona

Reference: Final Drainage Report for Mountain Horizons (North of the Powerline Floodway)
Final Drainage Report for Mountain Horizons (South of the Powerline Floodway)
Drainage Report for Mass Grading of Nova Vista (Signal Butte Rd & Elliot Rd)
Final Drainage Report for Gila River Ranches (Warner and Meridian)
Drainage Report for Mountain Heights
Final Drainage Report for Keighley Place
Final Drainage Report for Bella Via Parcel 11A
Final Drainage Report for Bella Via Parcel 12
Final Drainage Report for Bella Via Parcel 13
Final Drainage Report for Bella Via Parcel 14
Final Drainage Report for Bella Via Parcel 15
Final Drainage Report for La Mira Phase 1
Mass Grading Plan for Signal Butte 105- La Mira Phase 2

Watershed	Development	Basin ID	Retention Required (acre-ft)	Total Retention Required (acre-ft)	Account for 80% in HEC-1 (acre-ft)	Total Volume To HEC-1 (acre-ft)	Total Volume From EMF Model (WS4-SEM.DAT) (acre-ft)
73B	Mountain Ranch	A2	7.11	31.98	25.58	39.41	29.0
		A1	2.87				
		OS1	2.07				
		C1	4.06				
		C2	3.15				
		C3	0.53				
		D1	4.49				
		D2	2.44				
		OS2	1.68				
		OS3	1.62				
		OS4	1.96				
	Mountain Heights	A	2.90	9.62	7.70		
		B	1.18				
		C	0.59				
		D	0.61				
		E	3.56				
		F	0.78				
	Stratsford Estates	A	4.67	7.66	6.13		
		1/2 B AND C	2.99				
73C	Nova Vista	B1	4.83	31.81	25.45	37.21	58.0
		B2	1.51				
		B3	5.29				
		B4	0.49				
		B5	7.15				
		B6	1.77				
		B7	0.73				
		B8	5.14				
		B9	3.58				
		B10	0.54				
		B11	0.36				
		B12	0.06				
		B13	0.14				
		B14	0.11				
		B15	0.07				
		B16	0.04				
	Mountain Horizons (North)	A1	4.80	14.70	11.76		
		B1	4.83				
		C1	5.07				
74B	Gila River Ranches	A, B, C	10.29	19.19	15.35	17.75	22.0
		D1, D2	2.28				
		E	2.49				
		F1, F2, F3, F4	2.22				
		K1	0.28				
		K2	0.91				
		M1	0.15				
		M2	0.23				
		N	0.34				
	Stratsford Estates	1/2 B AND C	2.99	3.00	2.40		
74C	Mountain Horizons (North)	D1	5.98	29.63	23.70	23.70	35.0
		E1	3.86				
		F1, F2, F3, F4, F5	6.46				
		G1	4.67				
		H1, H2	4.24				
		J1	2.13				
		X1	0.98				
		Gateway Polytechnic Academy (Ray & Signal Butte)	1.31				
77B	Gila River Ranches	G, H3	3.64	7.99	6.39	16.44	16.0
		H1, H2	2.02				
		J1a, J1b, J1c	2.00				
		P	0.22				
		Q	0.11				
	Keighley Place	A-1	6.85	12.56	10.05		
		A-2	2.87				
		G-1	1.46				
		G-2	0.39				
		G-3	0.67				
		G-4	0.19				
		G-5	0.11				
		J	0.02				

77C	Mountain Horizons (South)	A1	3.61	5.14	4.11	18.80	28.0
		A2	0.96				
		LDS Church (Ray & Mountain Road)	0.57				
	Bella Via Unit 11A	RT-1A	0.71	3.80	3.04		
		RT-1B	0.71				
		RT-2A	0.31				
		RT-2B	0.11				
		RT-3	1.96				
	Bella Via Unit 11B	B2	0.81	0.81	0.65		
	Bella Via Parcel 12	A	0.27	3.11	2.49		
		B	0.45				
		C	0.55				
		D	0.46				
		E	0.65				
		F	0.73				
	Bella Via Parcel 13	A	0.19	4.51	3.61		
		B	0.63				
		C	0.63				
		D	0.31				
		E	2.66				
		G	0.09				
	Bella Via Parcel 14	A	0.30	2.40	1.92		
		B	0.34				
		C	0.82				
		D	0.94				
	Bella Via Parcel 15	B	0.79	3.73	2.98		
		C	0.70				
		D	2.14				
		E	0.10				
78C	Bella Via Parcel 14	E	0.41	2.00	1.60	12.64	24.0
		F	1.03				
		H	0.41				
		K	0.15				
	La Mira Phase 1	A	1.28	8.98	7.18		
		B	1.00				
		C	1.40				
		D	2.19				
		E	0.16				
		F	0.39				
		G	2.56				
	La Mira Phase 2	H	0.51	4.83	3.86		
		I	1.09				
		J	3.23				
79A[1]	Cadence	--	--	67.50	54.00	54.00	0.0
RET10B[2]	Ray Road & Signal Butte Road Existing Retention Basins adjacent to Powerline Floodway	A	1.31	5.55	--	5.55	0.0
		G	4.24				
					Total	**225.5**	**212.0**

Notes:

1) Within Subbasin 79A is the "Cadence" master planned community. Portions of this community are constructed and portions are currently under construction. The estimated retention provided for Cadence was assumed to be the 100-year, 2-hour retention volume. With a precipitaion depth of 2.2 inches and a runoff coefficient of 0.65; 80% of the total provided retention is approimated at 54 acre-feet.

2) The existing retention basins along Ray and Signal Butte Road collect a portion of runoff from Ray Road and Signal Butte Road. The total volume provided is 5.55 acre-feet taken from *Eastmark E. Ray Road Improvement Plans* dated 6-20-2013 by Hoskin Ryan Consultants.

Post Developed Rating Curve for CP7C

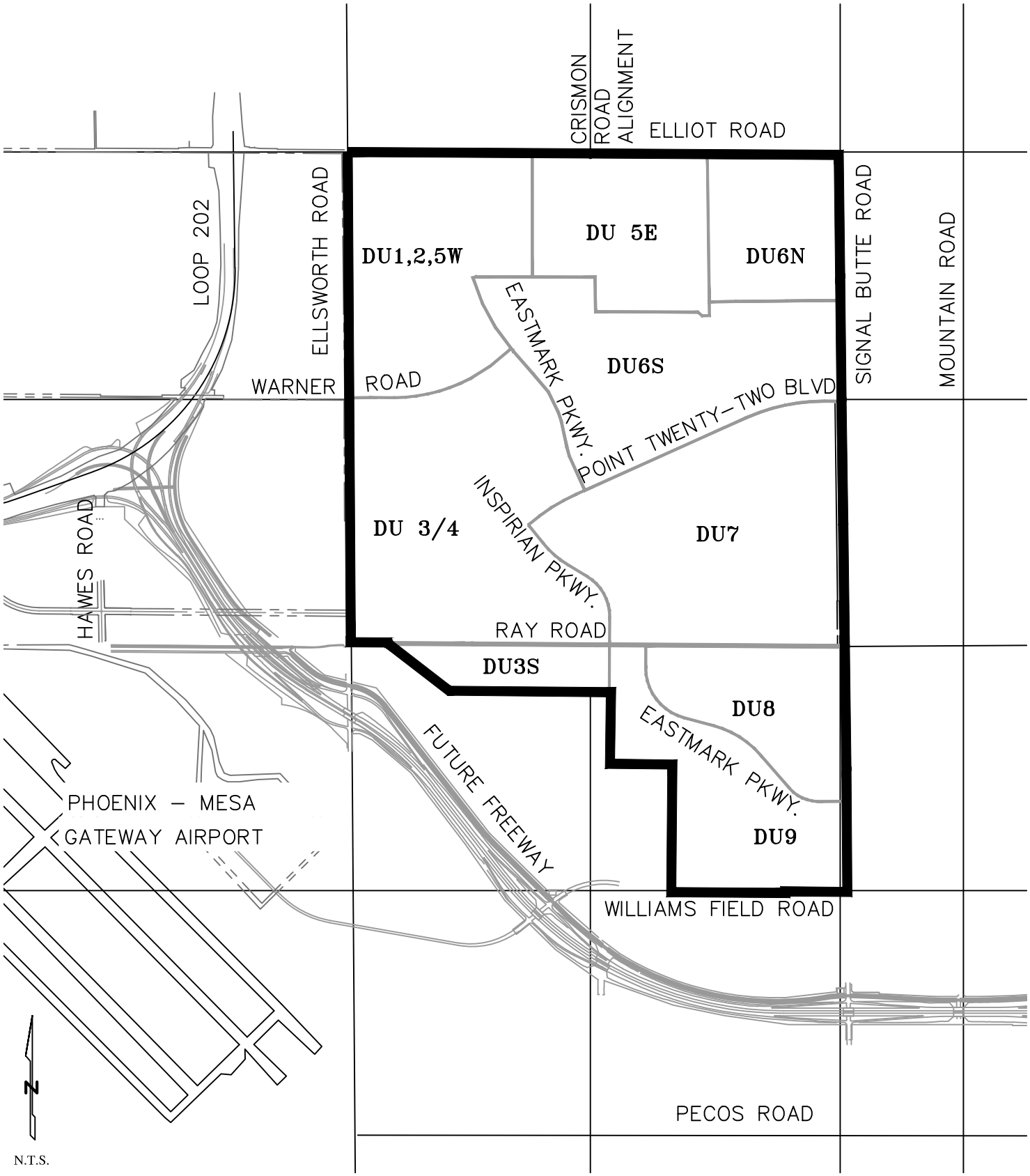
Table 12 - Post-Developed Rating Curve for CP7C

Description: DU 3/4 Phase 2 Basins C & D Rating Curve for CP7C
Location Eastmark - Mesa, Arizona

Inflow	Warner Road Outfall (Routing 7CT7B)	Point Twenty-Two Outfall (Routing 7CT13)
(CFS)	(CFS)	(CFS)
0	0	0
1	0.3	0.7
5.8	1.8	4
9	2.8	6.2
16.7	5	11.2
21.5	6.6	14.9
22.8	7	15.8
100	30	70

EXHIBIT 1

VICINITY MAP



TOWNSHIP 1 SOUTH, RANGE 7 EAST
OF THE GILA AND SALT RIVER
MERIDIAN, MARICOPA COUNTY, ARIZONA

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OR RECORDING

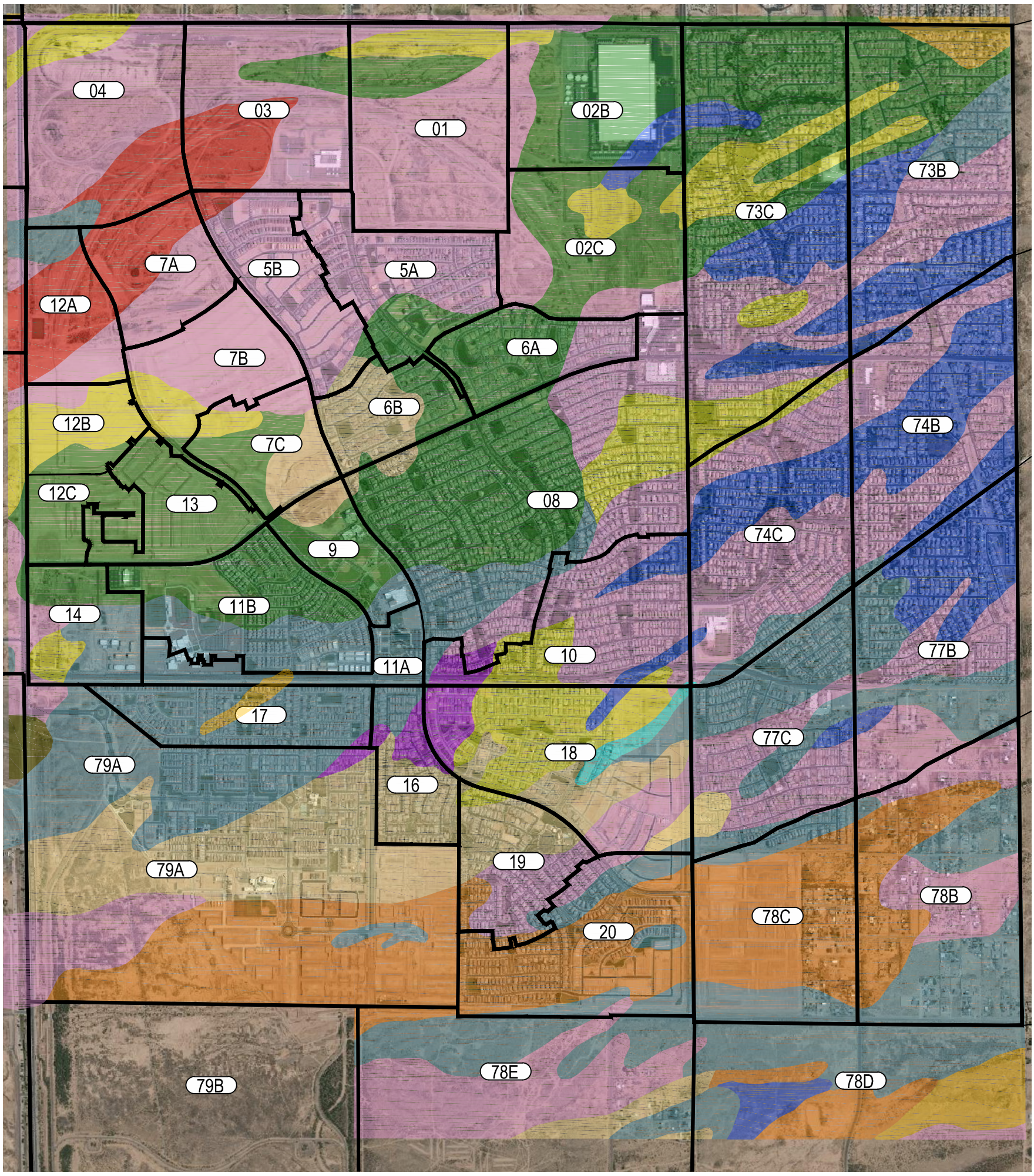
EXHIBIT 1: VICINITY MAP

EASTMARK
MESA, ARIZONA

WOOD PATEL

EXHIBIT 2

SOILS MAP



LEGEND

- Antho sandy loam
- Antho gravelly sandy loams
- Contine clay loam
- Estrella loams
- Gilman loams
- Mohall loams
- Mohall loam, calcareous solum
- Mohall clay loam
- Mohall clay loam, calcareous solum
- Mohall clay
- Tremant gravelly sandy loams
- Tremant-Antho complex, 1% to 5% slopes
- HEC-1 SUB-BASIN BOUNDARY
- 000 HEC-1 SUB-BASIN ID

N

1800 0 900 1800

Horz. 1 in. = 1800 ft.

EXHIBIT 2 - SOILS MAP

EASTMARK

MARICOPA COUNTY, ARIZONA

NOT FOR CONSTRUCTION
OR RECORDING

WOOD PATEL

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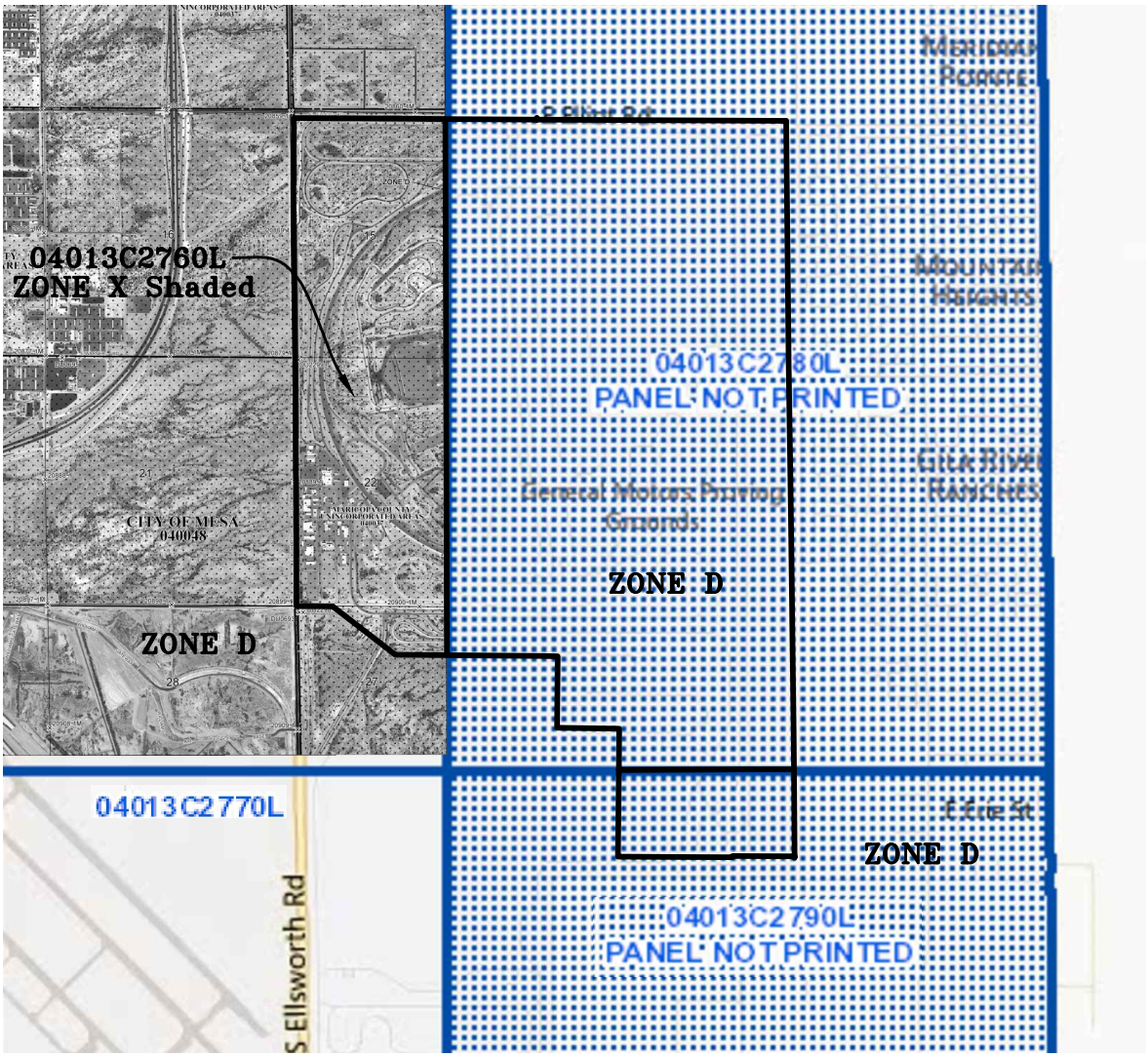
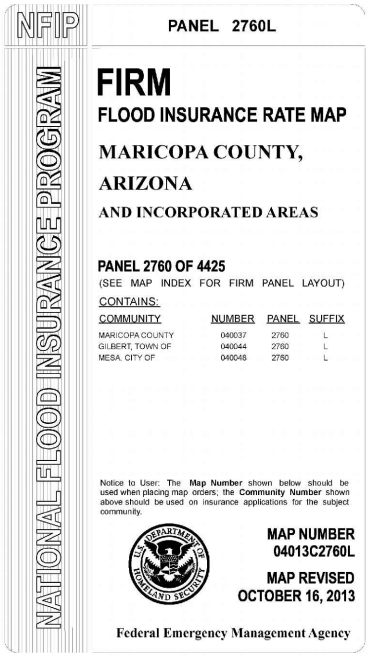
EXHIBIT 3

FLOOD INSURANCE RATE MAP




NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2760L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2760 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2760	L
GILBERT, TOWN OF	040044	2760	L
MESA, CITY OF	040048	2760	L

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 04013C2760L

MAP REVISED OCTOBER 16, 2013

Federal Emergency Management Agency

Zone "X" Shaded 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:
"No special flood hazard areas."

4000 0 2000 4000

1 inch = 4000ft.

N

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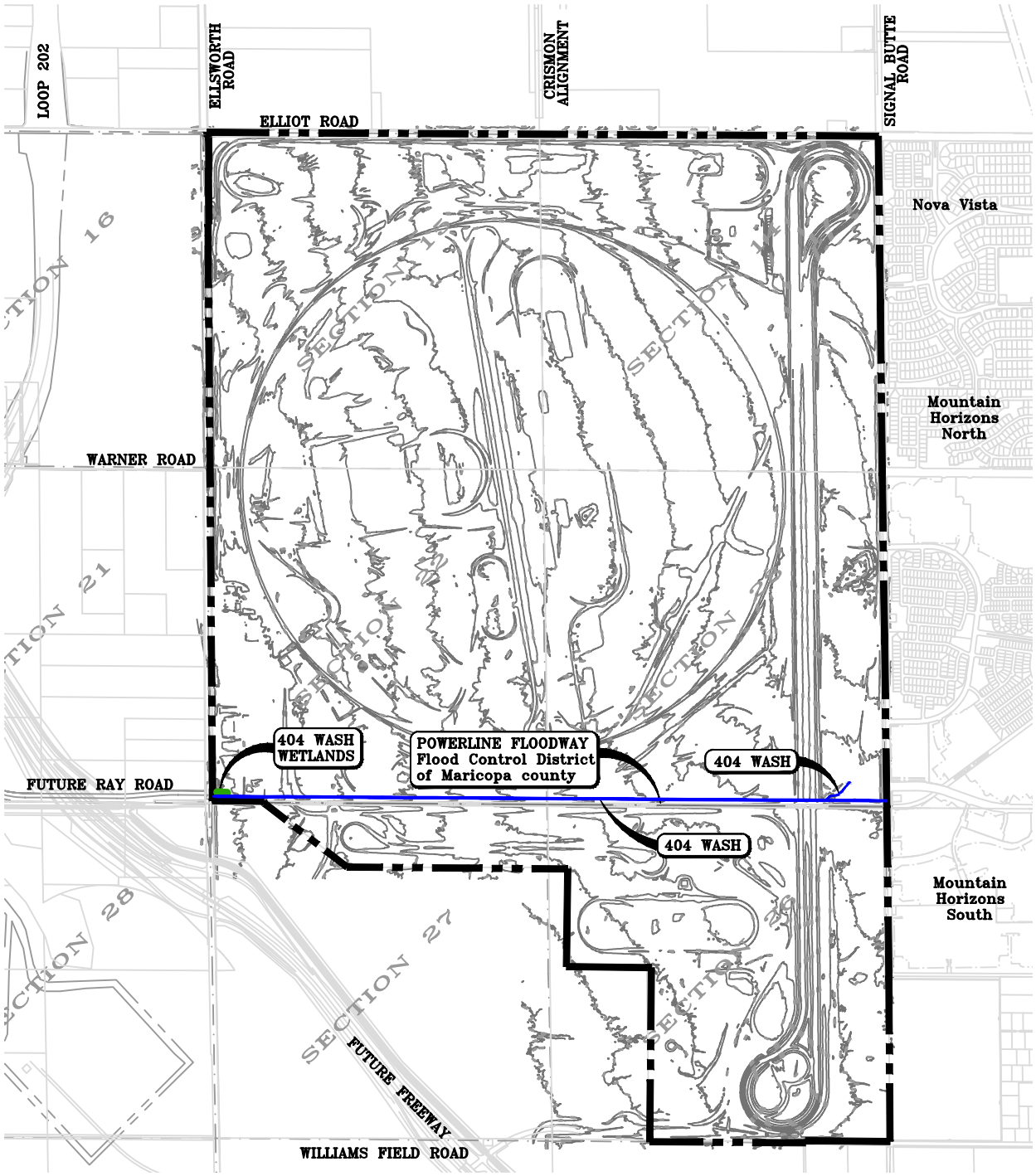
EXHIBIT 3: FEMA FIRM MAP

EASTMARK
MESA, ARIZONA

WOOD PATEL

EXHIBIT 4

SECTION 404 JURISDICTIONAL DELINEATION MAP



LEGEND

- 404 WASH
- 404 WASH WETLANDS
- PROPERTY BOUNDARY
- 5 FT. CONTOUR 1430

N

N.T.S.

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EXHIBIT 4: SECTION 404 JURISDICTIONAL DELINEATION MAP

EASTMARK
MESA, ARIZONA

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WOOD PATEL

EXHIBIT 5

PRE-DEVELOPED CONDITION HEC-1 SCHEMATIC

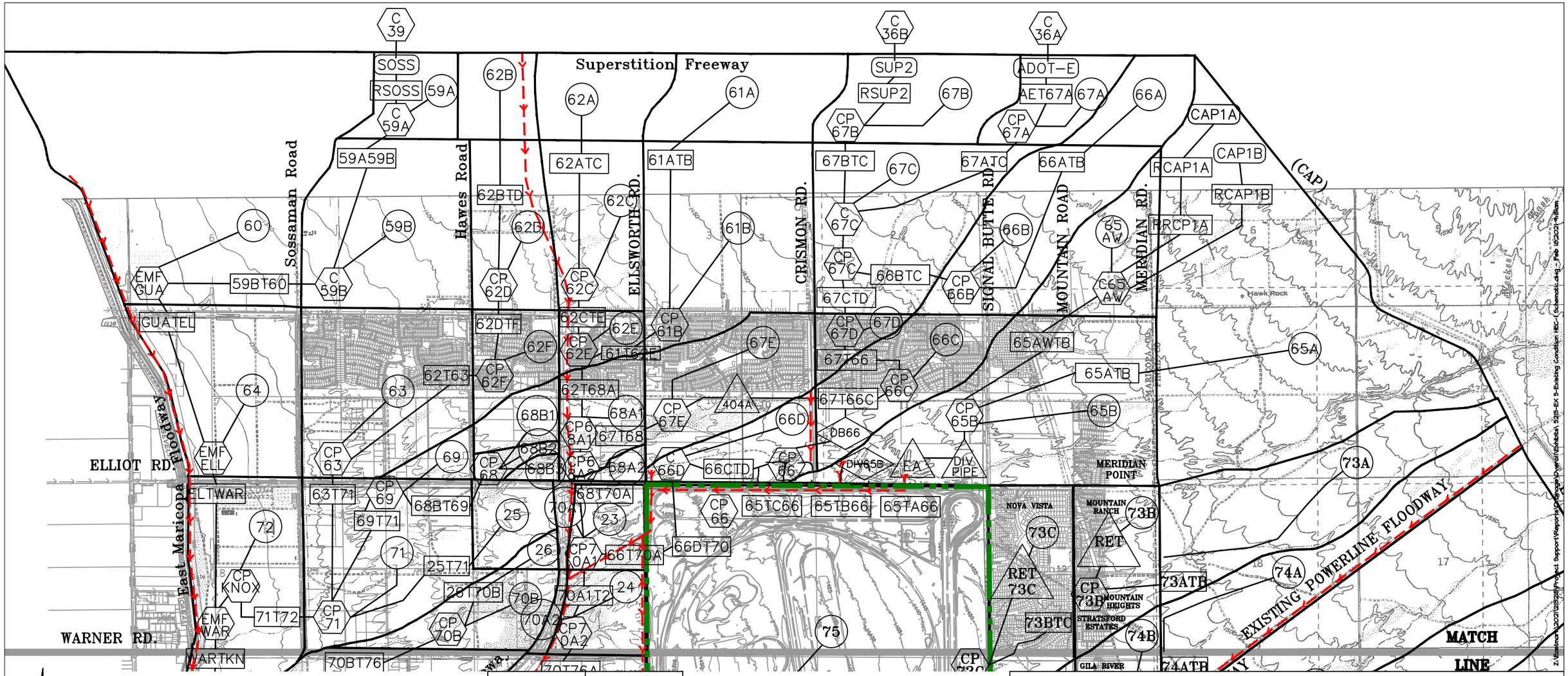

EXHIBIT 5: PRE-DEVELOPED CONDITION HEC-1 SCHEMATIC - SHEET 1

EASTMARK
MARICOPA COUNTY, ARIZONA

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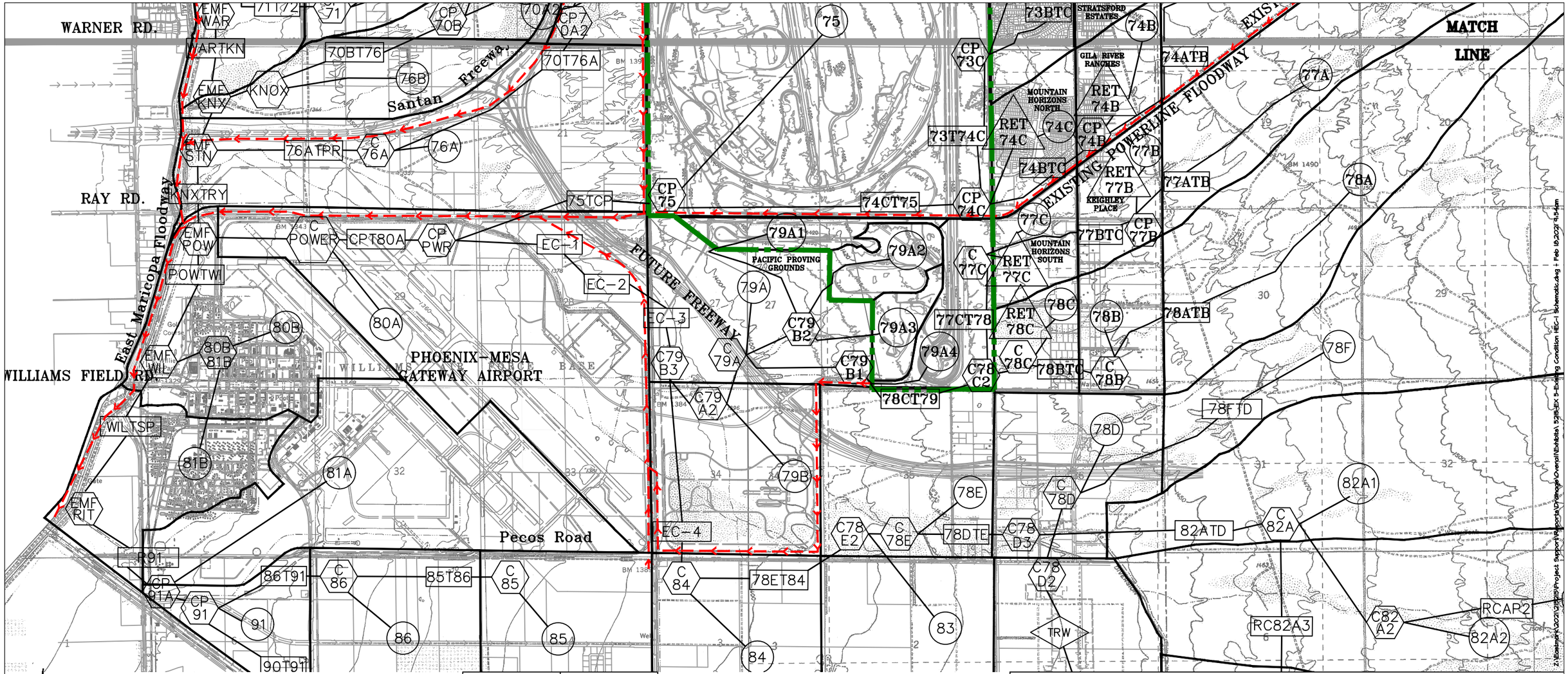
OR RECORDING

WOOD PATEL



LOCATION ID	DISCHARGE (CFS)
CP73C	419
CP74C	697
C77C	694
C78C	775
79A1	90
79A2	225
79A3	156
C79B1	1,090
CP66	1,323
CP75	661

3000 0 1500 3000

Horz. 1 in. = 3000 ft.

LEGEND

- EASTMARK BOUNDARY
- SUB-BASIN BOUNDARY
- EXISTING CHANNEL OR STORM DRAIN
- ROUTING
- 5 FT. CONTOUR
- 77C — WATERSHED ID
- 77BTC — ROUTING ID
- C 77C — CONCENTRATION POINT ID
- RET 73B — RETENTION ID

EXHIBIT 5: PRE-DEVELOPED CONDITION HEC-1 SCHEMATIC - SHEET 2

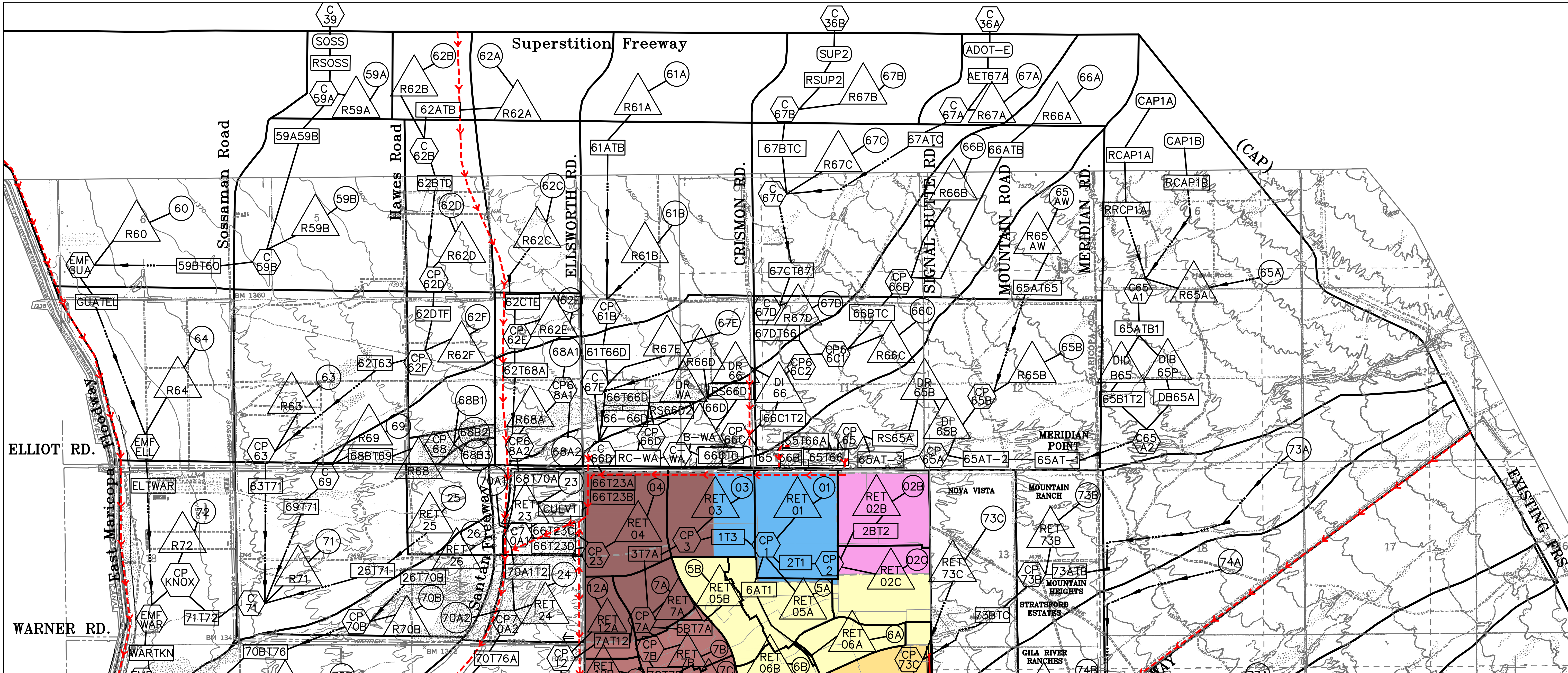
EASTMARK
MARICOPA COUNTY, ARIZONA

NOT FOR CONSTRUCTION OR RECORDING

WOOD PATEL

EXHIBIT 6

POST-DEVELOPED HEC-1 SCHEMATIC



3000 0 1500 3000

Horz. 1 in. = 3000 ft.

LOCATION ID	DISCHARGE (CFS)
CP73C	440
CP74C	635
C77C	511
C78C	904
RET17	1
CP19A	57
RET20	38
CP22B	944
C66D	1,078
CP75	626

LEGEND

- DU 1-2-5W
- DU 3S
- DU 3/4
- DU 5E
- DU 6N
- DU 6S
- DU 7
- DU 8
- DU 9
- 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
- 77C WATERSHED ID
- 77BTC ROUTING ID
- C 77C CONCENTRATION POINT ID
- RET 73B RETENTION ID

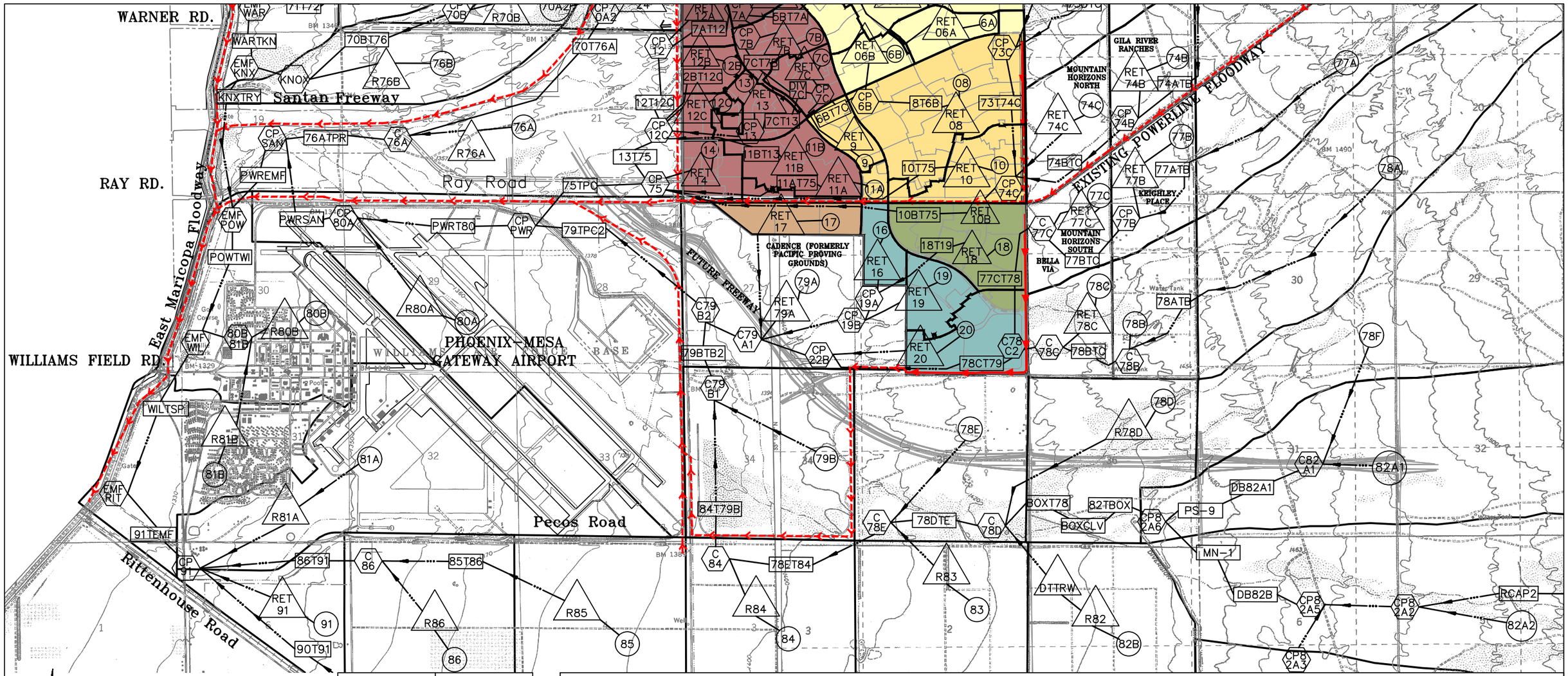
NOT FOR CONSTRUCTION OR RECORDING

EXHIBIT 6: POST DEVELOPED HEC-1 SCHEMATIC - SHEET 1

EASTMARK

MARICOPA COUNTY, ARIZONA

WOOD PATEL



LOCATION ID	DISCHARGE (CFS)
CP73C	440
CP74C	635
C77C	511
C78C	904
RET17	1
CP19A	57
RET20	38
CP22B	944
C66D	1,078
CP75	626

LEGEND

- DU 1-2-5W
- DU 3S
- DU 3/4
- DU 5E
- DU 6N
- DU 6S
- DU 7
- DU 8
- DU 9
- 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
- 77C — WATERSHED ID
- 77BTC — ROUTING ID
- C 77C — CONCENTRATION POINT ID
- RET 73B — RETENTION ID

NOT FOR CONSTRUCTION OR RECORDING

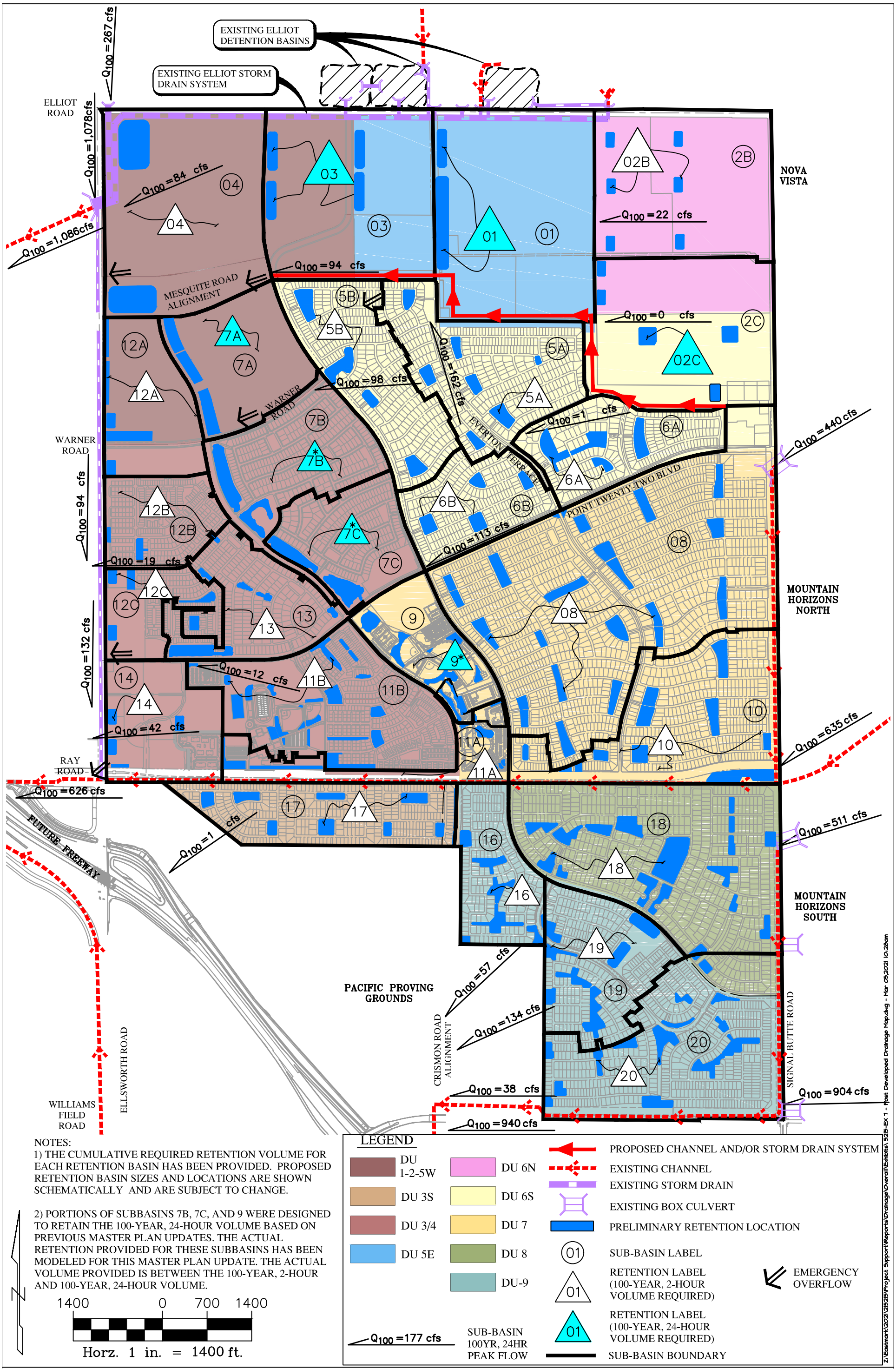
EXHIBIT 6: POST DEVELOPED HEC-1 SCHEMATIC - SHEET 2

EASTMARK
MARICOPA COUNTY, ARIZONA

WOOD PATEL

EXHIBIT 7

POST-DEVELOPED DRAINAGE MAP



NOTES:

1) THE CUMULATIVE REQUIRED RETENTION VOLUME FOR EACH RETENTION BASIN HAS BEEN PROVIDED. PROPOSED RETENTION BASIN SIZES AND LOCATIONS ARE SHOWN SCHEMATICALLY AND ARE SUBJECT TO CHANGE.

2) PORTIONS OF SUBBASINS 7B, 7C, AND 9 WERE DESIGNED TO RETAIN THE 100-YEAR, 24-HOUR VOLUME BASED ON PREVIOUS MASTER PLAN UPDATES. THE ACTUAL RETENTION PROVIDED FOR THESE SUBBASINS HAS BEEN MODELED FOR THIS MASTER PLAN UPDATE. THE ACTUAL VOLUME PROVIDED IS BETWEEN THE 100-YEAR, 2-HOUR AND 100-YEAR, 24-HOUR VOLUME.

1400 0 700 1400

Horz. 1 in. = 1400 ft.

LEGEND

- DU 1-2-5W
- DU 3S
- DU 3/4
- DU 5E
- DU 6N
- DU 6S
- DU 7
- DU 8
- DU-9
- Q100 = 177 cfs — SUB-BASIN 100YR, 24HR PEAK FLOW
- PROPOSED CHANNEL AND/OR STORM DRAIN SYSTEM
- EXISTING CHANNEL
- EXISTING STORM DRAIN
- EXISTING BOX CULVERT
- PRELIMINARY RETENTION LOCATION
- 01 — SUB-BASIN LABEL
- 01 — RETENTION LABEL (100-YEAR, 2-HOUR VOLUME REQUIRED)
- 01 — RETENTION LABEL (100-YEAR, 24-HOUR VOLUME REQUIRED)
- SUB-BASIN BOUNDARY
- EMERGENCY OVERFLOW

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EXHIBIT 7 - POST DEVELOPED DRAINAGE MAP

EASTMARK
MARICOPA COUNTY, ARIZONA

NOT FOR CONSTRUCTION OR RECORDING

WOOD PATEL

EXHIBIT 8

EAST MESA AREA DRAINAGE MASTER PLAN MAP

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

East Mesa Area Drainage Master Plan

F.C.D. CONTRACT NO. 95-32

LEGEND

- STUDY BOUNDARY
- EXISTING CHANNEL/DITCH
- EXISTING BRIDGE/CULVERT
- EXISTING STORM DRAIN
- EXISTING ROADWAY DIP SECTION/ WEIR/OVER-CHUTE
- EXISTING DIVERSION DIKE
- EXISTING WASH
- PROPOSED ROAD ALIGNMENT
- PROPOSED CHANNEL/STORM DRAIN PRIORITY 1
- PRIORITY 2
- PRIORITY 3
- EXISTING/PLANNED MAJOR CHANNEL
- PROPOSED DETENTION BASIN PRIORITY 1
- PRIORITY 2
- PRIORITY 3

N

2500 0' 2500 5000

SCALE: 1" = 5000'

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PROJECT PHASING

FIGURE 9