MASTER DRAINAGE REPORT
FOR
DEVELOPMENT UNIT 2
AT
EASTMARK

December 9, 2019
WP# 195036

Brookfield Residential

MASTER DEVELOPER APPROVAL

EASTMARK

DATE 12/17/19

Christina Christian - Dev. Mngr.

Master Reports - DU2

Submitted to:

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Registered Professional Engineer (Civil)
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Date Signed 12/09/19
ARIZONA, U.S.A.

EXPIRES 06/30/21

mesa·az

DEVELOPMENT SERVICES
REVIEWED FOR CODE
COMPLIANCE
DATE 7/14/2020 RAP

WOOD/PATEL
MISSION: CLIENT SERVICE®

APPROVED

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EXPIRES 06/30/21

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1.0 INTRODUCTION

1.1 General Background and Project Location

The proposed Development Unit 2 (Site) is anticipated to comprise approximately 179 acres within the 3,154-acre Eastmark master planned community in the City of Mesa (City). Development Unit 2 (DU 2) is planned to include single-family residential, multi-family residential, office, and open spaces.

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

The Site is located within Section 15, Township 1 South, Range 7 East of the Gila and Salt River Meridian. The Site is bounded by Warner Road to the south (from Ellsworth Road to Eastmark Parkway), Eastmark Parkway on the east (from Warner Road to Mesquite Road alignment), the Mesquite Road alignment on the north (from Ellsworth Road to Eastmark Parkway), and Ellsworth Road on the west (refer to Exhibit 1 – *Vicinity Map*).

The Site consists of multiple automotive test tracks and undisturbed desert. The Site was previously used by General Motors as a desert automobile testing facility. The Powerline Floodway is a major FCDMC facility that provides conveyance of discharge from the Powerline Flood Retarding Structure, approximately three miles east of the Site, and drainage conveyance for stormwater runoff for areas adjacent to the channel. Ultimately, the flow is conveyed to the East Maricopa Floodway (EMF) west of the Site.

1.2 Scope of the DU 2 Master Drainage Report

The DU 2 Master Drainage Report presents the drainage analysis for the Site, and 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 DU 2 at Eastmark.

Due to the flexible nature of the zoning within Eastmark, land uses and planning have changed from initial planning. Updates to this DU Master Drainage Report may be required if significant changes are made to the land uses and assumptions utilized to prepare this report. Sizing of onsite drainage infrastructure such as channels and storm drains will be completed with the final site design.

1.3 Construction Phasing

It is unknown at this time if DU 2 construction and drainage infrastructure will be phased. The entire DU could be mass graded as one (1) site, and final infrastructure could be phased as is currently being completed within DU 3/4 North.

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 Appendix A – *Proposed Condition Data and Hydrology* for information pertaining to existing soil conditions.

2.2 Rainfall Seasons

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

The second rainfall period occurs during the summer months, from June through August, and is commonly referred to as the 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 405 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."*

Additionally, Panel Number 04013C2760L 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, are believed to be within a FEMA Zone "D".

Zone "D" is defined by FEMA as follows:

"Areas in which flood hazards are undetermined."

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) for Eastmark. The Powerline Floodway Channel, a small wash, and a detention basin have been designated as Jurisdictional. Refer to Exhibit 4 – *Section 404 Jurisdictional Delineation Map* for the locations of Jurisdictional areas.

The Powerline Floodway lies south of DU 2 and is to remain undisturbed. It is WOODPATEL's understanding an individual permit was obtained for disturbance to the wash and basin.

2.5 Master Drainage Report Update for Eastmark

The *Master Drainage Report Update for Eastmark*, prepared by WOODPATEL and dated October 3, 2017, was approved by the City of Mesa. Additionally, the *Master Drainage Report Update for Eastmark*, prepared by WOODPATEL, dated December 9, 2019, was submitted concurrently to the City of Mesa for review and re-approval to incorporate development changes and has set the drainage criteria for the Site. The report includes a pre-developed condition HEC-1 model (MPGEX.DAT), as well as a full build-out model (EMDU34.DAT), which are modified versions of the current flood control district area drainage master plan models. The East Mesa Area Drainage Master Plan (ADMP), prepared in 1998 by Dibble & Associates, Inc. and Hoskin Ryan Consultants, Inc., is a regional drainage study prepared for the FCDMC.

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

3.0 PRE-DEVELOPED DRAINAGE CONDITION

3.1 Pre-Developed Drainage

The Site generally slopes in a southwesterly direction at approximately 0.5 to 1 percent. The peak elevation within the Site is 1,415 feet mean sea level (MSL), located near the intersection of Eastmark Parkway and Mesquite Road alignment. The lowest elevation within the Site is approximately 1,396 feet MSL, located near the intersection of Warner Road and Ellsworth Road. It is anticipated DU 3/4 will be constructed prior to the development of DU 2. Currently, the Site is covered with typical Sonoran Desert vegetation, including cactus, creosote, etc.

The pre-developed Eastmark hydrology was made up of one sub-basin which drains west to southwest into Ellsworth Road and the Powerline Floodway. This has been modeled accordingly within the current 100-year, 24-hour FCDMC model and the Master Drainage Report model.

3.1.1 Northern Boundary

Runoff along the northern boundary flows southerly across the proposed Mesquite Road alignment. Near the western end of the northern boundary, future Mesquite Road intersects with the existing circle race track previously utilized by General Motors. The track is elevated above adjacent ground, and currently retains a large watershed to the east. If Mesquite Road is constructed below the track berm elevation, a temporary berm or retention basin will likely be required to store runoff from the tributary watershed, and shall store the 100-year, 24-hour storm event to match existing conditions leaving the Site. These drainage measures will require design by the site Civil Engineer.

3.1.2 Eastern Boundary

DU 6 South (DU 6S) has been recently constructed and retains runoff from the 100-year, 2-hour storm event. During the 100-year, 24-hour storm event, minimal flows will impact DU 2 at the DU 6S outfall locations along the major roadways, which act as the emergency overflow corridors. The northern portion of the eastern boundary is bounded by undeveloped land in DU 5N. In the interim condition, existing and proposed berms and basins will need to be utilized to retain the 100-year, 24-hour storm event.

3.1.3 Western Boundary

The western boundary is not impacted by any offsite flows entering the Site. Ellsworth Road is adjacent to the western boundary of the Site. Within the northern portion of Ellsworth Road, an existing storm drain conveys storm water runoff from Ellsworth Road north to an existing channel. Additionally, within the southern portion of Ellsworth Road, an existing storm drain conveys storm water runoff from Ellsworth Road and discharges into the Powerline Floodway, south of Ray Road. This storm drain was sized to convey the 10-year storm event for Ellsworth Road; thus, a portion of the 100-year storm runoff generated from the east half street of Ellsworth Road will need to be retained within DU 2.

3.1.4 Southern Boundary

The southern boundary of DU 2 is bound by Warner Road and DU 3/4. No offsite flows impact the southern boundary of the Site, as DU 3/4 retains the 100-year storm event.

4.0 PROPOSED DRAINAGE CONDITION

4.1 Proposed Drainage Plan

The drainage concept for DU 2 is to route the minimal offsite flows from the east and DU 6S through the Site within streets and drainage corridors, while directing onsite storm water runoff to retention basins for storage. Offsite runoff impacting the northern boundary will be collected and stored with existing and proposed temporary berms and/or retention basins. Temporary basins within Sub-basin 75 shall be sized to store 75% of the runoff from the 100-year, 24-hour storm event for tributary areas to maintain peak flows and runoff volumes leaving the Site at or below pre-development levels. Temporary basins within Sub-basin 01A shall be sized to store 100% of the runoff from the 100-year, 24-hour storm event. Onsite infrastructure will depend upon construction phasing and will be determined and designed by the site Engineer.

Onsite runoff will be collected in roadways for overland flow conveyance to localized retention basins. Where street capacities are exceeded, vertical curb and/or underground storm drain systems may be utilized to convey the excess runoff. Refer to Exhibit 5 – *Interim Condition HEC-1 Schematic* for watershed delineations and locations.

The Great Park Phase 4 retention basins shall be sized to retain runoff volume from a 100-year, 24-hour storm event for the eastern portion of the Site. A precipitation depth equal to 3.51 inches or greater was utilized in accordance with *NOAA Atlas 14* and the City of Mesa to maintain peak flows and runoff volumes leaving Eastmark at or below pre-development levels. Retention basins for the remainder of DU 2 shall be sized to retain runoff volume from a 100-year, 2-hour storm event, utilizing a precipitation depth of 2.19 inches or greater.

Emergency overflow routes must be provided in the event that retention basin capacities are exceeded due to a storm larger than the design event or back-to-back storms as provided by the final design engineering of each site and development phase. Retention basins shall be designed to drain retained runoff within 36-hours after a storm event. Land uses for undeveloped land depicted in the hydrologic models are conceptual and subject to change, based on the allowable criteria for a PCD.

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

4.2 Proposed Condition Hydrology

An interim condition HEC-1 model (DU2INT.DAT) was created to estimate peak flows when DU 2 is developed prior to the full build-out of Eastmark. The model was created based upon the most current post developed condition model. The undeveloped watersheds within Eastmark and outside DU 2 were modeled with a low-density employment land use to represent an automotive proving ground, per the FCDMC's DDMSW program, with exception to previously master planned Development Units. Those areas, including Development Units 3/4, 3S, 6S, 7, 8, and 9, were modeled with post-developed land uses. Additionally, Parcel DU 6A within DU 6N, and Parcel DU 5A within DU 5N, have been modeled with post-developed land uses. Retention from these developed areas was included within the model.

PRE-DEVELOPED CONDITION		INTERIM CONDITION		FULL BUILD-OUT CONDITION	
Location ID	**Discharge**	**Location ID**	**Discharge**	**Location ID**	**Discharge**
CP 75	661cfs	CP75	661 cfs	CP75	661 cfs
79A1	90 cfs	RET17	1 cfs	RET17	1 cfs
79A2	225 cfs	CP19A	57 cfs	CP19A	57 cfs
79A3	156 cfs	RET19	134 cfs	RET19	134 cfs
C79B1	1,090 cfs	78CT79	940 cfs	78CT79	940 cfs

4.3 Proposed Hydraulics

4.3.1 Street Hydraulics

Arterials and major collectors shall be designed to convey the peak flows generated by a 10-year peak storm within the roadway infrastructure, with a spread limited to 1 traffic lane in each direction. All other public roadways shall be designed to convey the peak flows generated by a 10-year peak storm between the curbs. All roadways shall be designed to convey the 100-year storm within the right-of-way and adjacent parkway. Where the peak flows exceed the capacity of the public street to convey the peak flows, storm drains or other drainage facilities shall be installed and sized to carry the excess flows (i.e. when the 10-year peak exceeds the spread criteria or exceeds the curb capacity of the

public street, or when the right-of-way cannot convey the 100-year peak flow). Storm drain and/or channel systems will convey storm water runoff to retention basins located throughout the Site.

4.4 Retention

4.4.1 Retention Storage

The 100-year, 2-hour required retention volume for Sub-basin 12A within DU 2 is estimated to be 7.12 acre-feet, based on the conceptual land use. The 100-year, 24-hour required volume for Sub-basin 7A within DU 2 is estimated to be 22.07 acre-feet. Additionally, the 100-year, 24-hour retention required for Sub-basin 4A is estimated to be 5.13 ac-ft. These retention volumes have been included in the HEC-1 model. If actual land uses and required retention volumes vary from this report, updates to this report may be required to analyze impacts to downstream drainage infrastructure.

Refer to *Table 5 - Interim Condition Onsite Retention Volume Summary* within Appendix A for a detailed summary of required retention volumes. The proposed retention volumes are based on a 100-year, 2-hour precipitation depth of 2.19 inches, and a 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.

The temporary retention modeled for the offsite portion of Eastmark, Sub-basins 01A and 75, were assumed to be 100% and 75%, respectively, of the interim peak-flow. If interim-condition berming and storage are modified by construction the assumption of interim storage should be re-evaluated.

4.4.2 Stormwater Quality

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

4.5 Maintenance

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

5.0 CONCLUSIONS

Based on the analysis of the *Master Drainage Report for Development Unit 2 at Eastmark*, the following conclusions can be made:

1. This *Master Drainage Report for Development Unit 2 at Eastmark* is prepared in accordance with Wood, Patel & Associates, Inc.'s understanding of the drainage parameters set by the Flood Control District of Maricopa County, the City of Mesa, and the *Master Drainage Report for Eastmark*.

2. Offsite flows shall be conveyed around and through the Site adequately, per jurisdictional requirements.

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

4. Onsite retention shall be provided to retain runoff generated by the 100-year, 2-hour storm event for the majority of developed areas within DU 2. Additionally, Sub-basin 7A will be required to retain runoff generated by the 100-year, 24-hour storm event.

6. Flow in excess of onsite storage capacity shall outfall to emergency overflow routes as specified by the design engineer.

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

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

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

6.0 REFERENCES

1. *Master Drainage Report Update for Eastmark*, Wood, Patel & Associates, Inc., December 9, 2019.

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

3. *Drainage Design Manual for Maricopa County, Arizona, Hydraulics,* Flood Control District of Maricopa County, August 15, 2013.

4. *Drainage Policies and Standards for Maricopa County*, Arizona, Flood Control District of Maricopa County, June 2016.

5. *2019 Engineering & Design Standards,* City of Mesa, April 2019.

6. *Flood Insurance Rate Map 04013C2760L*, Federal Emergency Management Agency (FEMA), October 16, 2013.

7. *HEC-1 Flood Hydrograph Package,* U.S. Army Corps of Engineers, June 1998.

APPENDIX A

INTERIM CONDITION DATA AND HYDROLOGY

Hydrology Interim Condition
100-Year, 24-Hour HEC-1 Output

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

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


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  119          ID
  120          ID         FILE PATH:
  121          ID         R:\MESA PROVING GROUNDS\2016\164528\PROJECT SUPPORT\REPORTS\DRAINAGE\
  122          ID         DU 5-5N-6S MASTER PLAN\HYDROLOGY\DU56INT.DAT
  123          ID
  124          ID    ********************************************************************************
  125          ID     FILE: DU6SINT.DAT
  126          ID
  127          ID     MODEL REVISED: 10-1-2015
  128          ID
  129          ID     PROJECT: MASTER DRAINAGE REPORT FOR DU 6 SOUTH AT EASTMARK
  130          ID
  131          ID     THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO
  132          ID         OTHER MODELS IS REQUIRED TO RUN THIS MODEL.
  133          ID
  134          ID     MODEL REVISION DESCRIPTION:
  135          ID
  136          ID         THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
  137          ID         DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USES FOR DU 6S AND
  138          ID         PHASE 1 WITHIN PARCEL 10 OF DU 3/4  HAVE BEEN UPDATED TO REFLECT
  139          ID         DETAILED PLANNING. LAND USES FOR DU 5E,THE REMAINING DU 3/4, AND
  140          ID         THE UNDEVELOPED PORTION OF DU 6N HAS BEEN REVISED TO REMAIN AS
  141          ID         EXISTING LAND USE FOR THIS INTERIM CONDITION.
  142          ID         THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES ONSITE MODELING
  143          ID         FOR THE FOLLOWING DEVELOPMENT UNITS WHICH HAVE HAD DETAILED MASTER
  144          ID         PLANS PREPARED, INCLUDING: DU 8/9, 3S, AND 7N. THE REMAINING ONSITE
  145          ID         IS CONTEMPLATED AS EXISTING LAND USE.
  146          ID
  147          ID         MODEL REVISED BY:
  148          ID         WOOD, PATEL & ASSOCIATES, INC.
  149          ID         STEVE MCKEE, E.I.T.
  150          ID
  151          ID         FILE PATH:
  152          ID         R:\MESA PROVING GROUNDS\2015\154382\PROJECT SUPPORT\REPORTS\DRAINAGE\
  153          ID         DU 6S MASTER PLAN\HYDROLOGY\DU6SINT.DAT
  154          ID
  155          ID    ********************************************************************************
  156          ID
  157          ID     FILE: DU5EINT.DAT
  158          ID
  159          ID     MODEL REVISED: 04-21-2014
```

```
 160          ID
 161          ID    PROJECT: MASTER DRAINAGE REPORT FOR DU 5 EAST AT EASTMARK
 162          ID
 163          ID    THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO
 164          ID        OTHER MODELS IS REQUIRED TO RUN THIS MODEL.
 165          ID
1                                      HEC-1 INPUT                                    PAGE  4

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

 166          ID    MODEL REVISION DESCRIPTION:
 167          ID
 168          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
 169          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 5E HAS
 170          ID        CHANGED FROM GOLF TO INDUSTRIAL.  AREAS THAT PREVIOUSLY DRAINED TO GOLF
 171          ID        WHERE 100-YEAR, 24-HOUR RETENTION WAS PROVIDED WILL NOW BE REQUIRED TO
 172          ID        SELF RETAIN RETENTION VOLUME FROM THEIR SITE FOR THE 100-YEAR, 24-HOUR
 173          ID        STORM PEAK FLOWS HAVE REMAINED THE SAME.  THIS IS AN INTERIM CONDITION
 174          ID        MODEL WHICH INCLUDES ONSITE MODELING FOR AREAS THAT HAVE HAD DETAILED
 175          ID        MASTER PLANS PREPARED AND THE REMAINING ONSITE IS CONTEMPLATED AS
 176          ID        EXISTING LAND USE.
 177          ID
 178          ID        MODEL REVISED BY:
 179          ID        WOOD, PATEL & ASSOCIATES, INC.
 180          ID        DANIEL MATTHEWS, P.E.
 181          ID
 182          ID        FILE PATH:
 183          ID        R:\MESA PROVING GROUNDS\2014\144173\PROJECT SUPPORT\REPORTS\DRAINAGE\
 184          ID        DU 5E DRAINAGE MASTER PLAN\HYDROLOGY\DU5EINT.DAT
 185          ID
 186          ID   ***************************************************************************
 187          ID
 188          ID    FILE: EMDU5E.DAT
 189          ID
 190          ID    MODEL REVISED: 04-18-2014
 191          ID
 192          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE (FOR DEVELOPMENT UNIT 5 EAST)
 193          ID
 194          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
 195          ID        FOR DEVELOPMENT UNIT 5 EAST (DU 5E).
 196          ID
 197          ID    MODEL REVISION DESCRIPTION:
 198          ID
 199          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
 200          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 5E HAS
 201          ID        CHANGED FROM GOLF TO INDUSTRIAL.  AREAS THAT PREVIOUSLY DRAINED TO GOLF
 202          ID        WHERE 100-YEAR, 24-HOUR RETENTION WAS PROVIDED WILL NOW BE REQUIRED TO
 203          ID        SELF RETAIN RETENTION VOLUME FROM THEIR SITE FOR THE 100-YEAR, 24-HOUR
 204          ID        STORM PEAK FLOWS HAVE REMAINED THE SAME.  THE REMAINING PORTION OF LAND
 205          ID        THAT WAS ASSOCIATED WITH GOLF HAS BEEN REVISED TO RESIDENTIAL USE.
 206          ID
 207          ID        MODEL REVISED BY:
 208          ID        WOOD, PATEL & ASSOCIATES, INC.
 209          ID        DANIEL MATTHEWS, P.E.
 210          ID
 211          ID        FILE PATH:
 212          ID        R:\MESA PROVING GROUNDS\2014\144173\PROJECT SUPPORT\REPORTS\DRAINAGE\
 213          ID        EASTMARK OVERALL MASTER DRAINAGE UPDATE\HYDROLOGY\PROPOSED\EMDU5E.DAT
 214          ID
 215          ID   ***************************************************************************
 216          ID
 217          ID    FILE: EMDU34.DAT
 218          ID
 219          ID    MODEL REVISED: 04-14-2014
 220          ID
1                                      HEC-1 INPUT                                    PAGE  5

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

 221          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3/4
 222          ID
 223          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
 224          ID        FOR DEVELOPMENT UNIT 3/4 (DU 3/4).
 225          ID
 226          ID    MODEL REVISION DESCRIPTION:
 227          ID
 228          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
 229          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USE FOR DU 3/4 HAS BEEN
 230          ID        REVISED TO REFLECT MORE DETAILED PLANNING.  MINOR ADJUSTMENTS TO LAND
 231          ID        USES OUTSIDE OF DU 3/4 HAVE BEEN MADE.  ADDITIONALLY WATERSHED
 232          ID        BOUNDARIES HAVE BEEN REVISED TO REFLECT A CONCEPTUAL MASS GRADE PLAN
 233          ID        PROVIDED TO WOOD/PATEL BY A CONSULTANT OF THE DEVELOPER DMB MESA
 234          ID        PROVING GROUNDS LLC.
 235          ID
 236          ID        MODEL REVISED BY:
 237          ID        WOOD, PATEL & ASSOCIATES, INC.
 238          ID        DANIEL MATTHEWS, P.E.
 239          ID
 240          ID        FILE PATH:
 241          ID        R:\MESA PROVING GROUNDS\2011\113697.09\PROJECT SUPPORT\REPORTS\
 242          ID        EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU34.DAT
 243          ID
 244          ID   ***************************************************************************
 245          ID    FILE: EMDU3S.DAT
 246          ID
 247          ID    MODEL REVISED: 12-11-2013
 248          ID
 249          ID    PROJECT: EASTMARK MASTER DRAINAGE UPDATE FOR DEVELOPMENT UNIT 3 SOUTH
 250          ID
 251          ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT PLANNED LAND USES
 252          ID        FOR DEVELOPMENT UNIT 3 SOUTH (DU-3S).
 253          ID
 254          ID    MODEL REVISION DESCRIPTION:
 255          ID
 256          ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
 257          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT). LAND USES FOR DU-3S ARE
 258          ID        CONSISTENT WITH THE PREVIOUS MODEL (EMDU89.DAT) THEREFORE RESULTING
```

```
ID        PEAK FLOWS HAVE REMAINED THE SAME.
ID
ID        MODEL REVISED BY:
ID        WOOD, PATEL & ASSOCIATES, INC.
ID        DANIEL MATTHEWS, P.E.
ID
ID        FILE PATH:
ID        R:\MESA PROVING GROUNDS\2011\113697.08\PROJECT SUPPORT\REPORTS\
ID        EASTMARK OVERALL DRAINAGE MASTER UPDATE\HYDROLOGY\PROPOSED\EMDU3S.DAT
ID
ID   ****************************************************************************
ID
ID    FILE: EMDU89.DAT
ID
ID    MODEL REVISED: 1-22-2013
ID
ID    PROJECT: EASTMARK 646
```



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

ID
ID    THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING
ID        FOR DEVELOPMENT UNITS 8&9 (DU 8&9).
ID
ID    MODEL REVISION DESCRIPTION:
ID
ID        THIS MODEL IS AN EXERPT OF THE MODEL PROVIDED BY THE FLOOD CONTROL
ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS WERE
ID        UPDATED TO REFLECT CURRENT PLAN FOR DEVELOPMENT UNITS 8 & 9.
ID
ID        MODEL REVISED BY:
ID        WOOD, PATEL & ASSOCIATES, INC.
ID        DARREN E. SMITH, P.E.
ID
ID        FILE PATH:
ID        R:\MESA PROVING GROUNDS\2012\123835\PROJECT SUPPORT\REPORTS\
ID        DRAINAGE\HYDROLOGY\PROPOSED\EMDU89.DAT
ID
ID   ****************************************************************************
ID
ID        FILE: MPGDU7.DAT
ID
ID        MODEL REVISED: 09-07-2011
ID
ID        PROJECT: MESA PROVING GROUNDS
ID
ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
ID
ID        THIS IS A POST DEVELOPED MODEL REVISION TO REFLECT UPDATED PLANNING
ID        FOR DEVELOPMENT UNIT 7 (DU7)PROVIDED BY ARIZONA LAND DESIGN ON 09/02/201
ID        09/02/2011.
ID
ID        MODEL REVISION DESCRIPTION:
ID
ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS WERE
ID        UPDATED TO REFLECT A GRADING PLAN PROVIDED BY LD TEAM ON 8/30/2011.
ID        MODELING OF THE POWERLINE FLOODWAY HAS BEEN UPDATED TO REFLECT THE
ID        EXISTING SECTIONS AND SLOPE PER AS-BUILT DRAWINGS ACROSS THE MPG
ID        SITE.
ID
ID        MODEL REVISED BY:
ID        WOOD, PATEL & ASSOCIATES, INC.
ID        DANIEL W. MATTHEWS, E.I.T.
ID
ID        FILE PATH:
ID        R:\MESA PROVING GROUNDS\2011\113697\PROJECT SUPPORT\REPORTS\
ID        DRAINAGE\HYDROLOGY\MPGDU7.DAT
ID
ID
ID   ***************************************************************************
ID
ID        FILE: MPG20RT2.DAT
ID
```



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

ID        MODEL REVISED: 04-25-2011
ID
ID        PROJECT: MESA PROVING GROUNDS
ID
ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
ID
ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
ID        BY SWABACK PARTNERS ON 12/12/07.
ID
ID        MODEL REVISION DESCRIPTION:
ID
ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS 01 AND
ID        20 WERE UPDATED TO REFLECT THE INCORPORATION OF THE FIRST SOLAR SITE
ID        IN THE NORTHEAST CORNER OF DU-6.  WATERSHED 02 WAS SPLIT INTO 02A AND
ID        02B.  LAND USE WAS CHANGED TO INDUSTRIAL FOR 02B AND ENTIRELEY
ID        RESIDENTIAL FOR 02A.
ID        THE FIRST SOLAR SITE RUNOFF WILL NOW BE RETAINED ENTIRELY ONSITE.
ID
ID        MODEL REVISED BY:
ID        WOOD, PATEL & ASSOCIATES, INC.
ID        STEPHEN M. SCINTO, P.E.
ID
ID        FILE PATH:
ID        R:\MESA PROVING GROUNDS\2010\103564.04\PROJECT SUPPORT\REPORTS\
```

```
  358          ID        DRAINAGE\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL\
  359          ID        MPG20RT2.DAT
  360          ID
  361          ID    ************************************************************************
  362          ID
  363          ID        FILE: MPG20RT2.DAT
  364          ID
  365          ID        MODEL REVISED: 09-16-08
  366          ID
  367          ID        PROJECT: MESA PROVING GROUNDS
  368          ID
  369          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  370          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  371          ID
  372          ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  373          ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
  374          ID        BY SWABACK PARTNERS ON 12/12/07.
  375          ID
  376          ID        MODEL REVISION DESCRIPTION:
  377          ID
  378          ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  379          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  ONSITE WATERSHEDS 01, 02,
  380          ID        03, AND 06 WERE UPDATED TO REFLECT THE CURRENT GOLF COURSE
  381          ID        CONFIGURATION.
  382          ID
  383          ID        MODEL REVISED BY:
  384          ID        WOOD, PATEL & ASSOCIATES, INC.
  385          ID        DANIEL W. MATTHEWS, E.I.T.
1                                      HEC-1 INPUT                                        PAGE  8

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

  386          ID
  387          ID        FILE PATH:
  388          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
  389          ID        PLAN\2ND SUBMITTAL(COM)\HYDROLOGY\MPG20RT2.DAT
  390          ID
  391          ID    ************************************************************************
  392          ID
  393          ID        FILE: MPG20RT2.DAT
  394          ID
  395          ID        MODEL REVISED: 05-15-08
  396          ID
  397          ID        PROJECT: MESA PROVING GROUNDS
  398          ID
  399          ID        MODEL REVISION DESCRIPTION:
  400          ID
  401          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  402          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  403          ID
  404          ID
  405          ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  406          ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
  407          ID        BY SWABACK PARTNERS ON 12/12/07.
  408          ID
  409          ID
  410          ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  411          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  WATERSHED 79A WAS UPDATED
  412          ID        AS REQUESTED BY FLOOD CONTROL DISTRICT OF MARICOPA COUNTY TO REDUCE THE
  413          ID        PERCENT IMPERVIOUS VALUE FROM 80% TO 0% TO MATCH THE LAND USE AS MODELED
  414          ID        WITHIN THE EAST MESA ADMP.
  415          ID
  416          ID        MODEL REVISED BY:
  417          ID        WOOD, PATEL & ASSOCIATES, INC.
  418          ID        DANIEL W. MATTHEWS, E.I.T.
  419          ID
  420          ID        FILE PATH:
  421          ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
  422          ID        PLAN\2ND SUBMITTAL\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
  423          ID        MPG20RT2.DAT
  424          ID
  425          ID    ************************************************************************
  426          ID
  427          ID        FILE: MPG20RT2.DAT
  428          ID
  429          ID        MODEL REVISED: 01-08-08
  430          ID
  431          ID        PROJECT: MESA PROVING GROUNDS
  432          ID
  433          ID        MODEL REVISION DESCRIPTION:
  434          ID
  435          ID        THIS MODEL SHOULD REPLACE WS4-SEM.DAT IN THE HEC-1 RUN SEQUENCE SPECIFIE
  436          ID        BELOW.  REFERENCING WS2-NEM.DSS IS STILL REQUIRED.
  437          ID
  438          ID
  439          ID        THIS IS A 100-YEAR, 2-HOUR RETENTION SCENARIO MODEL USING
  440          ID        THE 20MSF COMMERCIAL SPACE AND 15K DU LAND PLAN PROVIDED
1                                      HEC-1 INPUT                                        PAGE  9

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

  441          ID        BY SWABACK PARTNERS ON 12/12/07.
  442          ID
  443          ID
  444          ID        THIS MODEL IS AN EXERPT OF THE MODEL PR0VIDED BY THE FLOOD CONTROL
  445          ID        DISTRICT OF MARICOPA COUNTY (WS4-SEM.DAT).  WATERSHEDS 68A, 68B,
  446          ID        70A, 70B, 71, 73B, 73C, 74B, 74C, 75, 77B, 77C, 78B, 78C, AND 79A
  447          ID        HAVE ALL BEEN UPDATED TO REFLECT CURRENT WATERSHED DELINEATIONS,
  448          ID        NEW DEVELOPMENT, CURRENT RETENTION,AND FLOOD ROUTING.  BASIN 75
  449          ID        HAS BEEN UPDATED TO REFLECT PLANNED DEVELOPEMENT FOR THE MESA
  450          ID        PROVING GROUNDS SITE.
  451          ID
  452          ID        MODEL REVISED BY:
  453          ID        WOOD, PATEL & ASSOCIATES, INC.
  454          ID        DANIEL W. MATTHEWS, E.I.T.
  455          ID
  456          ID        FILE PATH:
```

```
ID        R:\MESA PROVING GROUNDS\2006\062753\PROJECT SUPPORT\HYDRO\MDR-20-15 LAND
ID        PLAN\HYDROLOGY\POST-DEVELOPED 100YR2HR RETENTION MODEL (MPG20RT2)\
ID        MPG20RT2.DAT
ID
ID   ****************************************************************************
ID
ID
ID    ID  Kirkham Michael:
ID    Last Revised Date:  1/22/03
ID    Filename:  WS4-SEM.DAT
ID
ID    Comments Dated 1/22/03 (CJ)
ID
ID    This model should be used ONLY for the Rittenhouse and Chandler Heights
ID    Basin Design Project - Final Design Analyses.
ID
ID    This model is one of several models that represent the EMF watershed.
ID    This model covers the Southeast Mesa Area and should reference as a DSS
ID    the watershed model for the Northeast Mesa Area (Filename WS2-NEM.DAT).
ID
ID    This model is necessary to determine the input hydrographs for the
ID    Rittenhouse Basin Design HEC-RAS Unsteady State analysis.  To develop
ID    the necessary input hydrographs the following models should be run in order.
ID    Because the files utilize a TAPE21 file to export import hydrographs
ID    between models, prior to running the FIRST model (WS1-NWM.DAT) any existing
ID    TAPE21 file in the directory should be deleted.  The run procedure order is:
ID
ID         1)  WS1-NWM.DAT
ID         2)  WS2-NEM.DAT
ID         3)  WS3-QCSW.DAT
ID         4)  WS4-SEM.DAT (referencing WS2-NEM.DSS for the DSS file)
ID         5)  RT1-BASE.DAT
ID
ID    The necessary input hydrographs for the Rittenhouse Basin analysis
ID    are determined in RT1-BASE.  In that output file, the hydrograph at
ID    RWFLD1 should be exported and used as the input hydrograph at the
ID    EMF Reach 4 Cross Section 17.082.  And the hydrograph at RITTEN should
ID    be exported and used as the input hydrograph for the Rittenhouse Main
ID    Channel at Cross Section 820.00
1                                  HEC-1 INPUT                                          PAGE 10

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

ID
ID
ID    ****************************************************************************
ID    **** NOTE BY PRIMATECH ENGINEERS:                                       ****
ID    **** DATE: 06/12/2001                                                   ****
ID    **** THE NEW FILE NAME IS: SEBTALT2.DAT                                 ****
ID    **** THE FILE WAS RENAMED AS <<RTBTALT2.DAT>> FOR THE EAST MARICOPA     ****
ID    **** FLOODWAY CAPACITY MITIGATION PROJECT, BY FLOOD CONTROL DISTRICT OF ****
ID    **** MARICOPA COUNTY.                                                   ****
ID    **** THE FILE WAS RENAMED <<RTBTALT3.DAT>> AND UPDATED USING GREEN AND  ****
ID    **** AMPT FUTURE CONDITIONS FOR BASINS 258 TO 268.                      ****
ID    ****************************************************************************
ID
ID
ID
ID     THIS MODEL WAS ORIGINALLY MIDDOUT.DAT
ID     IT HAS BEEN MODIFIED BY CPE (7/2000)
ID     FOR ALTERNATIVE 2 FOR THE EAST MARICOPA FLOOWAY
ID     CAPACITY MITIGATION AND MULTI-USE CORRIDOR STUDY
ID     TO ROUTE BOTH THE POWERLINE FLOOWAY
ID     AND THE SANTAN FREEWAY CHANNEL INTO THE RAY BASIN PRIOR THEIR OUTFALL
ID     INTO THE EMF
ID
ID    ****************************************************************
ID
ID          Model files changed by Collins/Pina Engineering
ID          to reflect multi-use design concepts (recreation
ID          and environment) proposed throughout the entire
ID          EMF Corridor.    July 2000
ID
ID
ID     VERSION 8.06  CPE 7/31/00
ID
ID  *****************************************************************************
ID
ID
ID  *****************************************************************************
ID   FILENAME: MIDDOUT.DAT
ID
ID   ALL CIP INFRASTRUCTURE IS IN PLACE, FUTURE CONDITIONS LANDUSE IS IN PLACE
ID   FLOW IS ROUTED UP ELLSWORTH ROAD IN A EARTH LINED CHANNEL
ID
ID  *****************************************************************************
ID   PRODUCED BY DIBBLE AND ASSOCIATES AND HOSKIN ENGINEERING CONSULTANTS.
ID   File Name: Final8.Dat
ID   Revised - Jan. 2000 by SZ (Wood/Patel) From Final7.dat - new Z-V & Sideweir
ID   Revised - Jan. 2000 by SZ (Wood/Patel) from Final6.dat - 60% review comments
ID   Revised - Dec. 1999 by SZ (Wood/Patel) from Final5.dat
ID   Revised - Dec. 1999 by SZ (Wood/Patel) from Final4.dat
ID   Revised - Nov. 1999 by SZ (Wood/Patel) from Final3.dat
ID   Revised - June 1999 by SZ (Wood/Patel) for Final Model from Opt1.dat.
ID   Revised - May 1999 by SZ (Wood/Patel) for Option 1, Based on Model SDIB.DAT
ID   REVISED - MAY, 1999 BY VAS TO INCORPORATE INCREASE OF SUBBASIN RETENTION AND
ID             REVISIONS TO THE REGIONAL DETENTION BASIN STORAGE
ID   REVISED - FEB, 1999 BY VALERIE SWICK, FCD OF MARICOPA COUNTY
1                                  HEC-1 INPUT                                          PAGE 11

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

ID   REVISED - MAY, 1998 BY D&A
ID
ID   REVISED BY VALERIE SWICK, FEB. 26, 1998
ID
ID   FLOWS FROM DETENTION BASIN LOCATED AT NE CORNER OF ELLIOT AND ELLSWORTH ROADS
```

```
 556          ID   IS ROUTED TO THE SOUTHWEST BY SIPHON DRAW TO SUBBASIN 70A. FROM THERE THEY
 557          ID   WILL BE ROUTED BY A CHANNEL TO THE EMF. FLOWS FROM SUBBASINS ADJACENT TO
 558          ID   SANTAN FREEWAY ALIGNMENT WILL BE ROUTED SOUTH TO SUBBASIN 70A WHERE THEY WILL
 559          ID   BE COMBINED WITH FLOW IN SIPHON DRAW.
 560          ID
 561          ID   EAST MESA AREA DRAINAGE MASTER PLAN
 562          ID   AREA SOUTH OF SUPERSTITION (U.S. HWY 60)
 563          ID   AUGUST 1997
 564          ID   SOUTHEAST MESA HIGH RESOLUTION MODEL
 565          ID
 566          ID   **********FUTURE CONDITION MODEL OF THE WATERSHED**********************
 567          ID
 568          ID  ************ATTENTION************************************************************
 569          ID    SUBBASINS 75, 79A, 79B, 78E,  LANDUSES WERE NOT
 570          ID    CHANGED BECAUSE IT WAS FELT THAT THEIR FUTURE CONDITIONS LANDUSES WOULD BE
 571          ID    SIMILAR TO THE EXISTING CONDITIONS LANDUSES.
 572          ID    RETENTION VOLUMES WILL ALSO NOT BE UTILIZED FOR SUBBASINS 75, 79A, 79B, 78E
 573          ID    SOME QUEEN CREEK SUBBASINS WILL ALSO NOT HAVE RETENTION VOLUMES, EITHER
 574          ID    BECAUSE THEY LIE IN PINAL COUNTY AND WE DONT KNOW PINAL COUNTIES PLANS OR
 575          ID    THEY LIE IN THE SANTAN MOUNTAINS AND WON'T GET DEVELOPED
 576          ID    WILLIAMS GATEWAY AIRPORT (SUBBASINS 80A, 80B, 81A, AND 81B) ARE MODELED AS
 577          ID    FUTURE CONDITIONS AND HAVE RETENTION VOLUMES FOR THE 100YR 2HR STORM
 578          ID  ***************************************************************************
 579          ID   FILENAME:  SDIBB.DAT
 580          ID
 581          ID   THIS MODEL REPRESENTS THE FUTURE CONDITION OF THE WATERSHED.
 582          ID   TOTAL DRAINAGE AREA IS APPROXIMATELY 213 SQ. MI.
 583          ID   THIS MODEL USES A Kn VALUE OF 0.09 FOR DESERT LAND USE DUE TO SHEET FLOW
 584          ID   CONDITIONS.
 585          ID
 586          ID   100-YEAR 24-HOUR FREQUENCY
 587          ID   AREAL REDUCTIONS FROM FCD HYDROLOGY MANUAL
 588          ID   THIS MODEL INCLUDES INFLOW FROM NORTH OF THE SUPERSTITION FREEWAY
 589          ID   AND EAST OF THE CAP
 590          ID
 591          ID   DATA FROM THE QUEEN CREEK ADMS HAS BEEN ADDED TO CALCULATE FLOWS INTO THE
 592          ID   EMF.   MUSKINGUM ROUTING NSTEPS WERE ADJUSTED TO BE WITHIN THE SUGGESTED
 593          ID   RANGE.
 594          ID
 595          ID   METHODOLOGY
 596          ID   THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0
 597          ID   SCS TYPE II RAINFALL DISTRIBUTION
 598          ID   S-GRAPH HYDROGRAPH
 599          ID   GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
 600          ID   NORMAL DEPTH STORAGE CHANNEL ROUTING
 601          ID   APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN
 602          ID   EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS
 603          ID   DATED 1994
 604          ID   THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
 605          ID
1                                      HEC-1 INPUT                                    PAGE 12

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

 606          ID   ORIGINAL STUDY PERFORMED BY LISA C. YOUNG AND AFSHIN AHOURAIYAN, UPDATED BY
 607          ID   DAVID DEGERNESS (OCT-DEC, 1996). REVIEWED BY VALERIE A. SWICK
 608          ID   AND AMIR MOTAMEDI OF THE FLOOD CONTROL DISTRICT
 609          ID   HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
 610          ID   DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
 611          ID
 612          ID   ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2-3 FT/SEC FOR WASH/NATURAL
 613          ID   CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL
 614          ID
 615          ID   VELOCITIES FOR ADMP IMPROVEMENT CHANNELS FROM DIBBLE AND ASSOCIATES
 616          ID   SUGGESTED ALTERNATIVES (JULY 1, 1997)
 617          ID
 618          ID   ***************************************************************************
 619          ID   **** THE FOLLOWING NOTE WAS ADDED BY PRIMATECH ENGINEERS ON 06-12-2001 ****
 620          ID   ***************************************************************************
 621          ID   NOTE: MUST USE NEBUILD.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
 622          ID         SUPERSTITION FREEWAY.
 623          ID   ***************************************************************************
 624          ID
 625          ID
 626          ID   NOTE: MUST USE NDIBF.DSS AS THE DSS FILE TO IMPORT FLOWS ACROSS THE
 627          ID         SUPERSTITION FREEWAY.
 628          ID
 629          ID   DDM MCUHP2 SE MESA ADMP - SOUTH OF SUPERSTITION FWY, FUTURE CONDITIONS
              *DIAGRAM
 630          IT       5  1APR97    0000     600
 631          IO       5
 632          IN      15
 633          JD    3.60    0.01
 634          PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
 635          PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 636          PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 637          PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
 638          PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
 639          PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
 640          PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
 641          PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
 642          PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
 643          PC    .983    .986    .989    .992    .995    .998   1.000
 644          JD    3.58     1.0
 645          JD    3.49     5.0
 646          JD    3.38    10.0
 647          JD    3.24    30.0
 648          JD    3.10    60.0
 649          JD    3.05    90.0
 650          JD    3.00   120.0
 651          JD    2.97   150.0
              * ***************************************************************************
              *
              *
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            LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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652          KK     04A   BASIN
653          KM   BASIN 04A
654          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
655          KM    L=0.54   Lca=0.22      S=   24.1  Kn= .030  LAG=  10.5
656          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
657          BA   0.051
658          LG    0.23    0.15    8.85    0.07      61
659          UI       0      43     134     142      55      15       5       0       0       0
660          UI       0       0       0       0       0       0       0       0       0       0
661          UI       0       0       0       0       0       0       0       0       0       0
662          UI       0       0       0       0       0       0       0       0       0       0
663          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

664          KK  RET04A  DIVERT
665          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
666          DT  04ARET    5.13       0
667          DI       0   10000
668          DQ       0   10000
             *
             *

669          KK      75   BASIN
670          KM   BASIN 75
671          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
672          KM    L=  1.49  Lca=    0.27   S=  21.5  Kn= .060  LAG=  34.1
673          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
674          BA   0.438             0.25
675          LG    0.10    0.15    8.85    0.09      80
676          UI       0      43      86     185     240     298     398     534     417     334
677          UI     263     205     129      75      62      43      21      13      13      13
678          UI      13       0       0       0       0       0       0       0       0       0
679          UI       0       0       0       0       0       0       0       0       0       0
680          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

681          KK    CP23 COMBINE
682          KM   COMBINE HYDROGRAPHS 75 AND BASIN RET04A
683          HC       2
             *
             *

684          KK     73A
685          KM   BASIN 73A
686          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
687          KM    L=       2.3  Lca=      1.0  S=   34.9  Kn= .093  LAG=  94.5
688          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
689          BA     .95
690          LG     .35     .36    5.00     .27     .00
691          UI     34.     34.     34.     34.     84.    117.    134.    158.    171.    185.
692          UI    197.    214.    232.    254.    274.    317.    381.    429.    424.    369.
693          UI    332.    303.    282.    263.    240.    220.    202.    185.    169.    157.
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694          UI    134.    107.     90.     60.     60.     57.     55.     54.     34.     34.
695          UI     34.     34.     16.     10.     10.     10.     10.     10.     10.     10.
696          UI     10.     10.     10.     10.     10.     10.      0.      0.      0.      0.
697          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
             *
             *

698          KK   73ATB   ROUTE
699          KM   ROUTE FLOW FROM BASIN 73A THROUGH THE MOUNTAIN HEIGHTS DEVELOPEMENT FROM
700          KM   MERIDIAN ROAD TO MOUNTAIN ROAD.
701          RS       2    FLOW      -1
702          RC   0.045   0.040   0.045    2830  0.0050    0.00
703          RX    0.00    5.00   10.00   20.00  120.00  130.00  135.00  140.00
704          RY    4.00    3.00    2.50    0.00    0.00    2.50    3.00    4.00
             *
             *

705          KK     73B   BASIN
706          KM   BASIN 73B
707          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
708          KM    L=0.56  Lca=0.28  S=30.4  Kn=0.040  LAG=14.9
709          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
710          BA   0.425
711          LG    0.25    0.25    5.40    0.27      30
712          UI     169     530     973     829     481     180      73      30       0       0
713          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

714          KK  RET73B  DIVERT
715          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
716          DT  73BRET   39.41     0.0
717          DI       0   10000
718          DQ       0   10000
             *
             *

719          KK   CP73B COMBINE
720          KM   COMBINE HYDROGRAPHS 73ATB AND BASIN 73B
721          HC       2
             *
             *

722          KK   73BTC   ROUTE
723          KM   ROUTE FLOW THROUGH THE NOVA VISTA DEVELOPEMENT FROM MOUNTAIN ROAD TO
724          KM   SIGNAL BUTTE ROAD.
725          RS       4    FLOW      -1
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 726           RC   0.045   0.040   0.045    4500  0.0050    0.00
 727           RX    0.00    5.00   10.00   22.00  122.00  134.00  139.00  144.00
 728           RY    4.00    3.50    3.00    0.00    0.00    3.00    3.50    4.00
               *
               *
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LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 729           KK     73C   BASIN
 730           KM   BASIN 73C
 731           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 732           KM    L=1.33  Lca=0.30  S=22.6  Kn=0.040  LAG=22.5
 733           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 734           BA   0.585
 735           LG    0.25    0.25    5.40    0.27      30
 736           UI      88     344     512     764    1019     695     488     287     149      88
 737           UI      31      27      26       0       0       0       0       0       0       0
 738           UI       0       0       0       0       0       0       0       0       0       0
               *
               *

 739           KK  RET73C  DIVERT
 740           KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
 741           DT  73CRET   37.21     0.0
 742           DI       0   10000
 743           DQ       0   10000
               *
               *

 744           KK   CP73C COMBINE
 745           KM   COMBINE HYDROGRAPHS 73BTC AND BASIN 73C
 746           HC       2
               *
               *

 747           KK  73T74C   ROUTE
 748           KM   ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN
 749           KM   ENGINEERED CHANNEL FROM WARNER ROAD TO THE POWERLINE FLOODWAY.
 750           RS      20    FLOW      -1
 751           RC   0.032   0.032   0.032    4670   .0024
 752           RX       0       5      10      31      69    79.5    84.5    89.5
 753           RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
               *
               * ******************************************************************************
               *

 754           KK     74A
 755           KM   BASIN 74A
 756           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 757           KM    L=      2.4  Lca=      1.0   S=   42.2  Kn= .095  LAG=  92.9
 758           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
               * KO     2       2
 759           BA     .75
 760           LG     .35     .36    5.00     .27     .00
 761           UI     27.     27.     27.     27.     73.     96.    111.    129.    140.    151.
 762           UI    163.    175.    193.    208.    228.    268.    317.    362.    327.    287.
 763           UI    260.    239.    222.    206.    187.    171.    160.    142.    132.    118.
 764           UI     99.     79.     56.     48.     47.     45.     45.     32.     27.     27.
 765           UI     27.     19.      8.      8.      8.      8.      8.      8.      8.      8.
 766           UI      8.      8.      8.      8.      8.      0.      0.      0.      0.      0.
 767           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


 768           KK   74ATB   ROUTE
 769           KM   ROUTE FLOW FROM BASIN 74A VIA THE POWERLINE FLOODWAY FROM MERIDIAN ROAD TO
 770           KM   MOUNTAIN ROAD. FLOW ENTERS THE POWERLINE FLOODWAY VIA A 75FT WEIR ON THE
 771           KM   NORTHWEST CORNER OF THE MERIDIAN ROAD AND POWERLINE FLOODWAY INTERSECTION.
 772           RS       1    FLOW      -1
 773           RC   0.013   0.013   0.013    3200  0.0060    0.00
 774           RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
 775           RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
               *
               *

 776           KK     74B   BASIN
 777           KM   BASIN 74B
 778           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 779           KM    L=1.31  Lca=0.41  S=23.7  Kn=0.040  LAG=24.9
 780           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 781           BA   0.333
 782           LG    0.25    0.25    5.80    0.22      30
 783           UI      45     154     245     330     528     430     318     229     122      76
 784           UI      44      18      14      14       0       0       0       0       0       0
 785           UI       0       0       0       0       0       0       0       0       0       0
               *
               *

 786           KK  RET74B  DIVERT
 787           KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
 788           DT  74BRET   17.75     0.0
 789           DI       0   10000
 790           DQ       0   10000
               *
               *

 791           KK   CP74B COMBINE
 792           KM   COMBINE HYDROGRAPHS 74ATB AND BASIN 74B
 793           HC       2
               *
               *
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794          KK   74BTC   ROUTE
795          KM   ROUTE FLOW VIA THE POWERLINE FLOODWAY FROM MOUNTAIN ROAD TO SIGNAL BUTTE
796          KM   ROAD.
797          RS       1    FLOW      -1
798          RC   0.013   0.013   0.013    3100  0.0055    0.00
799          RX    0.00    7.00   21.50   30.00   36.00   44.50   59.00   66.00
800          RY    6.00    5.50    5.50    0.00    0.00    5.50    5.50    6.00
             *
             *

801          KK     74C   BASIN
802          KM   BASIN 74C
803          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
804          KM    L=1.22  Lca=0.40  S=25.4  Kn=0.040  LAG=23.7
805          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
806          BA   0.345
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

807          LG    0.25    0.17    6.80    0.15      30
808          UI      48     180     276     386     588     428     310     211      97      65
809          UI      35      15      15      16       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

811          KK  RET74C  DIVERT
812          KM   RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
813          DT  74CRET    23.7     0.0
814          DI       0   10000
815          DQ       0   10000
             *
             *

816          KK   CP74C COMBINE
817          KM   COMBINE HYDROGRAPHS 73T74C, 74BTC, AND BASIN 74C
             * KO     2
818          HC       3
             *
             * *****************************************************************************

819          KK  RET10B  DIVERT
820          KM   RETAIN A PORTION OF RAY ROAD
821          KM   BASINS C & D FROM RAY ROAD IMPROVEMENT PLANS
822          KM   BASINS OVERFLOW INTO POWERLINE FLOODWAY
823          DT  10BRET    5.55     0.0
824          DI       0   10000
825          DQ       0   10000
             *

826          KK  10BT75
827          KM  ROUTE FLOW FROM IN THE POWERLINE FLOODWAY FROM RET10A TO CP75
828          KM  THE NSTEP FOR THIS ROUTING WOULD NOT CONVERGE ON A VALUE AS
829          KM  IT OSCILLATED BETWEEN 3 AND 20. THE ASSUMPTION WAS MADE OF
830          KM  5 FEET PER SEC ACROSS THE ROUTING WHICH GIVES AN NSTEP OF 7.
831          RS       7    FLOW      -1
832          RC   0.030   0.013   0.030   10500   .0038
833          RX       0      15    16.5      25      33    41.5      43      58
834          RY     6.6     6.6     5.6       0       0     5.6     6.6     6.6
             *
             *
             * ******************************************************************************

835          KK     02B   BASIN
836          KM    BASIN 02B
837          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
838          KM    L=0.83  Lca=0.17  S=14.5  Kn=0.039  LAG=16.1
839          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
840          BA   0.158
841          LG    0.24    0.25    4.96    0.38      59
842          UI       0      53     170     295     336     201      94      43      15      10
843          UI       0       0       0       0       0       0       0       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          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

846          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

847          KK  RET02B  DIVERT
848          KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
849          DT  02BRET   14.45       0
850          DI       0   10000
851          DQ       0   10000
             *
             *

852          KK    2BT1   ROUTE
853          KM   ROUTE FLOW IN EXCESS OF THE 100-YEAR, 2-HR STORM OVERLAND TO
854          KM   DRAINAGE CORRIDOR ALONG SUBBASIN 1 AND SUBBASIN 5A BOUNDARY
855          RS      12    FLOW      -1
856          RC   0.032   0.032   0.032    4908  0.0045
857          RX    0.00       1       2       3    2003    2004    2005    2006
858          RY    1.00    0.75    0.50    0.00    0.00    0.50    0.75    1.00
             *
             *

859          KK     01A   BASIN
860          KM    BASIN 01A
861          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
862          KM    L=1.56  Lca=0.44  S=21.2  Kn=0.060  LAG=41.9
863          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
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   864           BA   0.609          0.0001
   865           LG    0.10    0.25    5.14    0.37      80
   866           UI       0      49      57     174     236     281     335     411     580     563
   867           UI     444     375     307     253     196     116      84      74      49      40
   868           UI      15      15      15      15      15      15       0       0       0       0
   869           UI       0       0       0       0       0       0       0       0       0       0
   870           UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

   871           KK     05A   BASIN
   872           KM    BASIN 05A
   873           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   874           KM    L=0.91  Lca=0.39  S=13.2  Kn=0.042  LAG=25.0
   875           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
   876           BA   0.188
   877           LG    0.25    0.15    7.94    0.11      34
   878           UI       0      25      85     138     186     293     245     180     130      71
   879           UI      43      26      11       8       8       0       0       0       0       0
   880           UI       0       0       0       0       0       0       0       0       0       0
   881           UI       0       0       0       0       0       0       0       0       0       0
   882           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


   883           KK  RET05A  DIVERT
   884           KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
   885           DT  05ARET   14.25     0.0
   886           DI       0   10000
   887           DQ       0   10000
                 *
                 *

   888           KK     06A   BASIN
   889           KM    BASIN 06A
   890           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   891           KM    L=0.79  Lca=0.18  S=21.5  Kn=0.045  LAG=17.2
   892           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
   893           BA   0.120
   894           LG    0.27    0.25    5.85    0.23      25
   895           UI       0      35     115     185     261     165      95      38      18       7
   896           UI       7       0       0       0       0       0       0       0       0       0
   897           UI       0       0       0       0       0       0       0       0       0       0
   898           UI       0       0       0       0       0       0       0       0       0       0
   899           UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

   900           KK  RET06A  DIVERT
   901           KM  RETAIN 100 YR 2 HR RUNOFF VOLUME
   902           DT  06ARET   10.28       0
   903           DI       0   10000
   904           DQ       0   10000
                 *
                 *

   905           KK    6AT1   ROUTE
   906           KM   ROUTE FLOW IN EXCESS OF THE 100-YEAR, 2-HR STORM ALONG THE EVERTON
   907           KM   TERRACE ROADWAY TO THE DRAINAGE CORRIDOR ALONG THE BOUNDARY BETWEEN
   908           KM   SUBBASIN 1 AND SUBBASIN 5A
   909           RS      19    FLOW      -1
   910           RC   0.030   0.015   0.030    3600  0.0011
   911           RX    0.00      17      23    28.5    46.5    65.5      71      84
   912           RY    1.07    0.90    0.90    0.00    1.15    0.00    0.90    1.78
                 *
                 *

   913           KK     CP1
   914           KM    COMBINE HYDROGRAPHS 2BT1, 01A, RET05A, AND 6AT1.
   915           HC       4
                 *
                 *

   916           KK     1T3   ROUTE
   917           KM  ROUTE FLOW FROM CP 1 TO CP 3 WITHIN DRAINAGE CORRIDOR.
   918           RS       3    FLOW      -1
   919           RC   0.035   0.035   0.035    2548  0.0051
   920           RX    0.00       2       4       8      42      46      48      50
   921           RY    2.00    1.50    1.00    0.00    0.00    1.00    1.50    2.00
                 *
                 *
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  LINE           ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


   922           KK     03A   BASIN
   923           KM    BASIN 03A
   924           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   925           KM    L=0.67  Lca=0.18  S=22.4  Kn=0.041  LAG=14.6
   926           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
   927           BA   0.056
   928           LG    0.24    0.15    8.36    0.09      51
   929           UI       0      23      72     133     108      60      22       9       4       0
   930           UI       0       0       0       0       0       0       0       0       0       0
   931           UI       0       0       0       0       0       0       0       0       0       0
   932           UI       0       0       0       0       0       0       0       0       0       0
   933           UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

   934           KK  RET03A  DIVERT
   935           KM   RETAIN 100 YR 24 HR RUNOFF VOLUME
```

```
 936          KM   INCLUDES TEMPORARY BASINS BUILT ALONG EVERTON TERRACE
 937          KM   TOTALING 1.18 AF AND THE BASINS BUILT ON THE EDGE CORE
 938          KM   SITE TOTALING 5.69 AF FOR A TOTAL OF 6.87 AF.
 939          DT  03RETA    6.87     0.0
 940          DI       0   10000
 941          DQ       0   10000
              *
              *

 942          KK     CP3
 943          KM    COMBINE HYDROGRAPHS 1T3 AND RET03A.
 944          HC       2
              *
              *

 945          KK    3T7A   ROUTE
 946          KM   ROUTE FLOW ALONG ROADWAYS FROM CP3 TO CP 7A.
 947          RS       4    FLOW      -1
 948          RC   0.030   0.015   0.030    3854   .0033
 949          RX       0     7.5       8      38      43      73    73.5      81
 950          RY     0.8     0.5       0     0.6     0.6       0     0.5     0.8
              *
              *

 951          KK      08   BASIN
 952          KM    BASIN 08
 953          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 954          KM    L=1.51  Lca=0.82  S=19.2  Kn=0.042  LAG=37.4
 955          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 956          BA   0.636
 957          LG    0.25    0.25    6.00    0.22      36
 958          UI       0      57      94     225     298     360     444     630     678     518
 959          UI     427     342     274     185     101      94      57      46      18      18
 960          UI      18      18      18       0       0       0       0       0       0       0
 961          UI       0       0       0       0       0       0       0       0       0       0
 962          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

 963          KK   RET08  DIVERT
 964          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 965          DT   08RET   48.06     0.0
 966          DI       0   10000
 967          DQ       0   10000
              *
              *

 968          KK    8T6B   ROUTE
 969          KM   ROUTE FLOW ALONG ROADWAYS FROM CP3 TO CP 7A.
 970          RS       2    FLOW      -1
 971          RC   0.030   0.015   0.030    2604   .0047
 972          RX       0    17.0    23.0    28.5    46.5    65.5    71.0      84
 973          RY     1.1     0.9     0.9     0.0    1.15       0     0.9    1.78
              *
              *

 974          KK     06B   BASIN
 975          KM    BASIN 06B
 976          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 977          KM    L=0.61  Lca=0.34  S=16.4  Kn=0.043  LAG=20.0
 978          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 979          BA   0.103
 980          LG    0.25    0.15    7.58    0.12      32
 981          UI       0      21      75     114     189     162     109      65      30      17
 982          UI       5       5       0       0       0       0       0       0       0       0
 983          UI       0       0       0       0       0       0       0       0       0       0
 984          UI       0       0       0       0       0       0       0       0       0       0
 985          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 986          KK  RET06B  DIVERT
 987          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
 988          DT  06BRET    7.32     0.0
 989          DI       0   10000
 990          DQ       0   10000
              *
              *

 991          KK    CP6B
 992          KM    COMBINE HYDROGRAPHS 8T6B AND RET06B.
 993          HC       2
              *
              *

 994          KK   6BT7C   ROUTE
 995          KM   ROUTE FLOW ALONG ROADWAYS FROM CP 6B TO CP 7C.
 996          RS       1    FLOW      -1
 997          RC   0.030   0.015   0.030    1001   .0060
 998          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
 999          RY     1.0     0.5     0.0     0.8     0.8       0     0.5     1.0
              *
              *
```



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

1000          KK      09   BASIN
1001          KM    BASIN  09
1002          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1003          KM    L=0.69  Lca=0.25  S=24.6  Kn=0.046  LAG=18.5
1004          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
1005          BA   0.094
1006          LG    0.26    0.25    5.46    0.32      23
1007          UI       0      23      79     122     196     138      89      40      22       8
1008          UI       5       5       0       0       0       0       0       0       0       0
1009          UI       0       0       0       0       0       0       0       0       0       0
1010          UI       0       0       0       0       0       0       0       0       0       0
1011          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1012          KK   RET09  DIVERT
1013          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME FOR SCHOOLS & MULTI-FAMILY. 100 YR 24 HR RUN
1014          KM   100 YR 24 HR RUNOFF FOR GREAT PARK.
1015          DT   09RET    7.91     0.0
1016          DI       0   10000
1017          DQ       0   10000
              *
              *

1018          KK    07C   BASIN
1019          KM    BASIN 07C
1020          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1021          KM    L=0.44  Lca=0.17  S=51.1  Kn=0.040  LAG=10.2
1022          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1023          BA   0.113
1024          LG    0.25    0.17    6.76    0.17      33
1025          UI       0     101     318     304     111      28      11       0       0       0
1026          UI       0       0       0       0       0       0       0       0       0       0
1027          UI       0       0       0       0       0       0       0       0       0       0
1028          UI       0       0       0       0       0       0       0       0       0       0
1029          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1030          KK  RET07C  DIVERT
1031          KM   RETAIN A PORTION OF THE 100 YR 24 HR RUNOFF VOLUME
1032          DT  07CRET   15.70     0.0
1033          DI       0   10000
1034          DQ       0   10000
              *
              *

1035          KK    CP7C
1036          KM    COMBINE HYDROGRAPHS 6BT7C, RET09, AND RET07C.
1037          HC       3
              *
              *
1                                        HEC-1 INPUT                                          PAGE 23

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

1038          KK   DIV7C  DIVERT
1039          KM   PORTION OF RUNOFF IS DIVERTED TO POINT TWENTY-TWO BLEED SYSTEM
1040          KM   THROUGH AN EXISTING 24-INCH BLEED PIPE
1041          DT   DTV7C     0.0    33.1
1042          DI       0     1.0     5.8     9.0     16.7     21.5     22.8        0       0
1043          DQ       0     0.7     4.0     6.2     11.2     14.9     15.8        0       0
              *
              *

1044          KK   7CT7B   ROUTE
1045          KM   ROUTE FLOW THROUGH BASINS FROM BASIN C TO BASIN B
1046          RS       1    FLOW      -1
1047          RC   0.035   0.035   0.035     618   .0030
1048          RX       0     1.0    20.0    24.0   198.0     202     222     235
1049          RY     6.0     5.0     1.0     0.0     0.0     1.0     5.0     6.0
              *
              *

1050          KK    07B   BASIN
1051          KM    BASIN 07B
1052          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1053          KM    L=0.73  Lca=0.28  S=31.5  Kn=0.043  LAG=17.6
1054          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1055          BA   0.151
1056          LG    0.24    0.15    7.58    0.12      35
1057          UI       0      41     139     220     326     212     128      53      27       9
1058          UI       9       0       0       0       0       0       0       0       0       0
1059          UI       0       0       0       0       0       0       0       0       0       0
1060          UI       0       0       0       0       0       0       0       0       0       0
1061          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1062          KK  RET07B  DIVERT
1063          KM   RETAIN A PORTION OF THE 100 YR 24 HR RUNOFF VOLUME
1064          DT  07BRET   19.43     0.0
1065          DI       0   10000
1066          DQ       0   10000
              *
              *

1067          KK    CP7B
1068          KM    COMBINE HYDROGRAPHS 7CT7B AND RET07B.
1069          HC       2
              *
              *

1070          KK    05B   BASIN
1071          KM    BASIN 05B
1072          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1073          KM    L=0.65  Lca=0.12  S=21.5  Kn=0.045  LAG=13.7
1074          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1075          BA   0.156
1076          LG    0.25    0.15    8.85    0.07      29
1                                        HEC-1 INPUT                                          PAGE 24
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1077          UI       0      75     226     408     284     135      51      15      12       0
1078          UI       0       0       0       0       0       0       0       0       0       0
1079          UI       0       0       0       0       0       0       0       0       0       0
1080          UI       0       0       0       0       0       0       0       0       0       0
1081          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1082          KK  RET05B  DIVERT
1083          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1084          DT  05BRET   11.53     0.0
1085          DI       0   10000
1086          DQ       0   10000
              *
              *

1087          KK   5BT7A   ROUTE
1088          KM   ROUTE FLOW ALONG ROADWAYS FROM 5B TO 7A
1089          RS       2    FLOW      -1
1090          RC   0.030   0.015   0.030    2155   .0040
1091          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
1092          RY     1.0     0.5     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

1093          KK     07A   BASIN
1094          KM    BASIN 07A
1095          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1096          KM    L=0.84  Lca=0.17  S=10.7  Kn=0.042  LAG=18.4
1097          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1098          BA   0.131
1099          LG    0.25    0.13   10.22    0.05      35
1100          UI       0      32     111     172     274     192     123      54      30      11
1101          UI       7       0       0       0       0       0       0       0       0       0
1102          UI       0       0       0       0       0       0       0       0       0       0
1103          UI       0       0       0       0       0       0       0       0       0       0
1104          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1105          KK  RET07A  DIVERT
1106          KM   RETAIN THE 100 YR 24 HR RUNOFF VOLUME
1107          DT  07ARET   16.94     0.0
1108          DI       0   10000
1109          DQ       0   10000
              *
              *

1110          KK    CP7A
1111          KM    COMBINE HYDROGRAPHS 3T7A, CP7B, 5BT7A, AND RET07A.
1112          HC       4
              *
              *
1                                        HEC-1 INPUT                                          PAGE 25

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

1113          KK   7AT12   ROUTE
1114          KM   ROUTE FLOW ALONG ROADWAYS FROM 7A TO 12
1115          KM   SLOPE OF ROUTING (WARNER ROAD) UNKNOWN
1116          KM   DURING THIS INTERIM CONDITION.
1117          RS       1    FLOW      -1
1118          RC   0.030   0.015   0.030    1540   .0080
1119          RX       0    17.5    18.0    57.0    73.0     112   112.5     130
1120          RY     1.0     0.5     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

1121          KK     12A   BASIN
1122          KM    BASIN 12A
1123          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1124          KM    L=0.61  Lca=0.22  S=21.3  Kn=0.034  LAG=12.8
1125          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1126          BA   0.117
1127          LG    0.24    0.15    9.46    0.06      48
1128          UI       0      65     192     329     198      78      28       9       0       0
1129          UI       0       0       0       0       0       0       0       0       0       0
1130          UI       0       0       0       0       0       0       0       0       0       0
1131          UI       0       0       0       0       0       0       0       0       0       0
1132          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1133          KK  RET12A  DIVERT
1134          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1135          DT  12ARET   10.90     0.0
1136          DI       0   10000
1137          DQ       0   10000
              *
              *

1138          KK    CP12
1139          KM    COMBINE HYDROGRAPHS 7AT12 AND RET12A
1140          HC       2
              *
              *

1141          KK  12T12C   ROUTE
1142          KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM CP12 TO CP12C
1143          RS       2    FLOW      -1
1144          RC   0.030   0.015   0.030    2600   .0014
1145          RX       0    17.5      18      57      73     112   112.5     130
1146          RY     2.0     1.0     0.5     0.0       0     0.5     1.0     2.0
```

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                *
                *
```



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

1147     KK    12B   BASIN
1148     KM    BASIN 12B
1149     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1150     KM    L=0.57  Lca=0.25  S=12.3  Kn=0.035  LAG=14.9
1151     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1152     BA   0.087
1153     LG    0.25    0.25    5.24    0.30      45
1154     UI       0      35     108     199     171      98      37      15       6       0
1155     UI       0       0       0       0       0       0       0       0       0       0
1156     UI       0       0       0       0       0       0       0       0       0       0
1157     UI       0       0       0       0       0       0       0       0       0       0
1158     UI       0       0       0       0       0       0       0       0       0       0
         *
         *

1159     KK  RET12B  DIVERT
1160     KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1161     DT  12BRET    7.61     0.0
1162     DI       0   10000
1163     DQ       0   10000
         *
         *

1164     KK  2BT12C   ROUTE
1165     KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM RET12B TO CP12C
1166     RS       4    FLOW      -1
1167     RC   0.030   0.015   0.030    1416   .0014
1168     RX       0    17.5      18      57      73     112   112.5     130
1169     RY     2.0     1.0     0.5     0.0       0     0.5     1.0     2.0
         *
         *

1170     KK     12C   BASIN
1171     KM    BASIN 12C
1172     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1173     KM    L=0.62  Lca=0.26  S=12.9  Kn=0.038  LAG=16.8
1174     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1175     BA   0.075
1176     LG    0.23    0.25    5.05    0.34      52
1177     UI       0      23      75     125     162     101      54      23      10       5
1178     UI       5       0       0       0       0       0       0       0       0       0
1179     UI       0       0       0       0       0       0       0       0       0       0
1180     UI       0       0       0       0       0       0       0       0       0       0
1181     UI       0       0       0       0       0       0       0       0       0       0
         *
         *

1182     KK  RET12C  DIVERT
1183     KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1184     DT  12CRET    7.12     0.0
1185     DI       0   10000
1186     DQ       0   10000
         *
         *
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LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1187     KK      13   BASIN
1188     KM    BASIN 13
1189     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1190     KM    L=0.95  Lca=0.26  S=17.9  Kn=0.044  LAG=21.5
1191     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1192     BA   0.121
1193     LG    0.25    0.25    5.05    0.34      34
1194     UI       0      19      78     117     181     206     139      95      45      27
1195     UI      14       6       6       0       0       0       0       0       0       0
1196     UI       0       0       0       0       0       0       0       0       0       0
1197     UI       0       0       0       0       0       0       0       0       0       0
1198     UI       0       0       0       0       0       0       0       0       0       0
         *
         *

1199     KK   RET13  DIVERT
1200     KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1201     DT   13RET   13.96     0.0
1202     DI       0   10000
1203     DQ       0   10000
         *
         *

1204     KK   DIV7CRETRIEVE
1205     KM   24-INCH DRAIN PIPE LEAVING RETENTION BASIN 7C
1206     DR   DTV7C
         *
         *

1207     KK   7CT13
1208     KM   ROUTE FLOW FROM BASIN 7C TO CP 13.
1209     KM  THE NSTEP FOR THIS ROUTING WOULD NOT CONVERGE ON A VALUE AS
1210     KM  IT OSCILLATED BETWEEN 3 AND 20.THE ASSUMPTION WAS MADE THAT
1211     KM  THE ROUTING WOULD BE 2 FEET PER SECOND FOR AN NSTEP 5.
1212     RS       5    FLOW      -1
1213     RC   0.030   0.015   0.030    3109   .0050
1214     RX       0    17.5      18      57      73     112   112.5     130
1215     RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
         *
         *
```

```
1216           KK    CP13
1217           KM    COMBINE HYDROGRAPHS DTV7C AND RET13.
1218           HC       2
               *
               *

1219           KK     11B   BASIN
1220           KM    BASIN 11B
1221           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1222           KM    L=1.22  Lca=0.36  S=23.0  Kn=0.043  LAG=25.0
1223           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1224           BA   0.219
1225           LG    0.27    0.25    4.58    0.46      44
```



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

1226           UI       0      29      99     161     217     342     286     210     151      82
1227           UI      50      30      13       9       9       0       0       0       0       0
1228           UI       0       0       0       0       0       0       0       0       0       0
1229           UI       0       0       0       0       0       0       0       0       0       0
1230           UI       0       0       0       0       0       0       0       0       0       0
               *
               *

1231           KK  RET11B  DIVERT
1232           KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1233           DT  11BRET   21.17     0.0
1234           DI       0   10000
1235           DQ       0   10000
               *
               *

1236           KK  11BT13
1237           KM   ROUTE FLOW FROM BASIN 7C TO CP 13.
1238           RS       4    FLOW      -1
1239           RC   0.030   0.015   0.030    1262   .0050
1240           RX       0    17.5      18      57      73     112   112.5     130
1241           RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
               *
               *

1242           KK   CP12C
1243           KM    COMBINE HYDROGRAPHS 12T12C, 2BT12C, RET12C, CP13, AND 11BT13.
1244           HC       5
               *
               *

1245           KK   13T75   ROUTE
1246           KM   ROUTE FLOW ALONG ELLSWORTH ROAD FROM CP12C TO CP75.
1247           RS       1    FLOW      -1
1248           RC   0.030   0.015   0.030    1230   .0016
1249           RX       0    17.5      18      57      73     112   112.5     130
1250           RY     2.0     1.0     0.5     0.0       0     0.5     1.0     2.0
               *
               *

1251           KK      14   BASIN
1252           KM    BASIN 14
1253           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1254           KM    L=0.46  Lca=0.20  S=17.4  Kn=0.031  LAG=10.5
1255           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1256           BA   0.117
1257           LG    0.22    0.25    4.96    0.37      69
1258           UI       0      99     307     326     126      35      12       0       0       0
1259           UI       0       0       0       0       0       0       0       0       0       0
1260           UI       0       0       0       0       0       0       0       0       0       0
1261           UI       0       0       0       0       0       0       0       0       0       0
1262           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

1263           KK   RET14  DIVERT
1264           KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1265           DT   14RET   12.25     0.0
1266           DI       0   10000
1267           DQ       0   10000
               *
               *

1268           KK     11A   BASIN
1269           KM    BASIN 11A
1270           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1271           KM    L=1.21  Lca=0.48  S=19.8  Kn=0.043  LAG=28.6
1272           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1273           BA   0.078
1274           LG    0.24    0.25    4.03    0.67      54
1275           UI       0       9      25      46      59      80     112      83      64      48
1276           UI      31      16      12       8       3       3       3       3       0       0
1277           UI       0       0       0       0       0       0       0       0       0       0
1278           UI       0       0       0       0       0       0       0       0       0       0
1279           UI       0       0       0       0       0       0       0       0       0       0
               *
               *

1280           KK  RET11A  DIVERT
1281           KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1282           DT  11ARET    8.03     0.0
1283           DI       0   10000
1284           DQ       0   10000
               *
               *
```

```
1285          KK  11AT75
1286          KM   ROUTE FLOW FROM BASIN 11A TO CP 75.
1287          RS       5    FLOW      -1
1288          RC   0.030   0.015   0.030    1855   .0051
1289          RX       0    17.5      18      57      73     112   112.5     130
1290          RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

1291          KK      10   BASIN
1292          KM    BASIN 10
1293          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1294          KM    L=1.11  Lca=0.56  S=18.9  Kn=0.041  LAG=28.2
1295          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1296          BA   0.171
1297          LG    0.24    0.19    6.54    0.17      44
1298          UI       0      20      57     102     132     186     244     181     138     104
1299          UI      61      35      25      15       6       6       6       0       0       0
1300          UI       0       0       0       0       0       0       0       0       0       0
1301          UI       0       0       0       0       0       0       0       0       0       0
1302          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                          HEC-1 INPUT                                          PAGE 30

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


1303          KK   RET10  DIVERT
1304          KM   RETAIN THE 100 YR 2 HR RUNOFF VOLUME
1305          DT   10RET   15.09     0.0
1306          DI       0   10000
1307          DQ       0   10000
              *
              *

1308          KK   10T75
1309          KM   ROUTE FLOW FROM BASIN 10 TO CP 75.
1310          RS       7    FLOW      -1
1311          RC   0.030   0.015   0.030    6300   .0060
1312          RX       0    17.5      18      57      73     112   112.5     130
1313          RY     1.0    0.50     0.0     0.8     0.8     0.0     0.5     1.0
              *
              *

1314          KK    CP75
1315          KM    COMBINE HYDROGRAPHS 13T75, RET14, 11AT75, 10T75, AND 10B75.
              * KO   2
1316          HC       5
              * ********************************************************************************
              *
              *
              *
              *

1317          KK     77A
1318          KM  BASIN 77A
1319          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1320          KM  L=      2.9  Lca=      1.5   S=   31.1  Kn= .092  LAG= 119.0
1321          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1322          BA    1.74
1323          LG     .35     .36    5.00     .27     .00
1324          UI     49.     49.     49.     49.     49.    108.    162.    185.    205.    230.
1325          UI    244.    264.    278.    293.    311.    333.    358.    380.    406.    462.
1326          UI    537.    584.    659.    601.    541.    496.    461.    430.    407.    385.
1327          UI    362.    334.    311.    293.    273.    252.    238.    226.    189.    161.
1328          UI    141.    104.     87.     87.     83.     81.     81.     73.     49.     49.
1329          UI     49.     49.     49.     22.     15.     15.     15.     15.     15.     15.
1330          UI     15.     15.     15.     15.     15.     15.     15.     15.     15.     15.
1331          UI     15.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1332          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1333          KK   77ATB   ROUTE
1334          KM  ROUTE BASIN 77A THROUGH THE KEIGHLEY PLACE SUBDIVISION FROM MERIDIAN ROAD TO
1335          KM  TO MOUNTAIN ROAD.
1336          RS       1    FLOW      -1
1337          RC   0.045   0.040   0.045    3000  0.0050    0.00
1338          RX    0.00    5.00   10.00   37.00   47.00   74.00   79.00   84.00
1339          RY    5.50    5.00    4.50    0.00    0.00    4.50    5.00    5.50
              *
              *
1                                          HEC-1 INPUT                                          PAGE 31

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


1340          KK     77B   BASIN
1341          KM  BASIN 77B
1342          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1343          KM  L=0.56  Lca=0.26  S=28.6  Kn=0.047  LAG=17.2
1344          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1345          BA   0.349
1346          LG    0.19    0.25    5.40    0.30      18
1347          UI     100     337     536     757     486     273     113      54      20      21
1348          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1349          KK  RET77B  DIVERT
1350          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1351          DT  77BRET   16.44     0.0
1352          DI       0   10000
1353          DQ       0   10000
              *
              *
```

```
1354          KK   CP77B COMBINE
1355          KM  COMBINE HYDROGRAPHS 77ATB AND 77B.
1356          HC       2
              *
              *

1357          KK   77BTC   ROUTE
1358          KM  ROUTE FLOW THROUGH THE MOUNTAIN HORIZONS (SOUTH) DEVELOPEMENT FROM MOUNTAIN
1359          KM  ROAD TO SIGNAL BUTTE ROAD.
1360          RS       3    FLOW      -1
1361          RC   0.045   0.040   0.045    4750  0.0042    0.00
1362          RX    0.00    5.00   10.00   20.00   85.00  105.00  110.00  115.00
1363          RY    5.00    4.00    3.00    0.00    0.00    3.00    4.00    5.00
              *
              * ******************************************************************************
              *

1364          KK     77C   BASIN
1365          KM  BASIN 77C
1366          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1367          KM  L=0.76  Lca=0.51  S=23.7  Kn=0.045  LAG=24.8
1368          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1369          BA   0.279
1370          LG    0.25    0.25    6.00    0.22      31
1371          UI       0      38     129     208     281     442     362     265     189     100
1372          UI      62      38      14      12      12       0       0       0       0       0
1373          UI       0       0       0       0       0       0       0       0       0       0
1374          UI       0       0       0       0       0       0       0       0       0       0
1375          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                         HEC-1 INPUT                                        PAGE 32

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


1376          KK  RET77C  DIVERT
1377          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1378          DT  77CRET    18.8     0.0
1379          DI       0   10000
1380          DQ       0   10000
              *
              *

1381          KK    C77C COMBINE
1382          KM  COMBINE HYDROGRAPHS 77BTC AND 77C
1383          HC       2
              *
              * ******************************************************************************
              *

1384          KK  77CT78   ROUTE
1385          KM  ROUTE FLOW SOUTH ALONG THE WEST SIDE OF SIGNAL BUTTE ROAD IN AN ENGINEERED
1386          KM  CHANNEL FROM RAY ROAD TO WILLIAMS FIELD ROAD.
1387          RS       4    FLOW      -1
1388          RC   0.032   0.032   0.032    4435  0.0020    0.00
1389          RX    0.00    5.00   10.00   24.00  124.00  138.00  143.00  148.00
1390          RY    4.50    4.00    3.50    0.00    0.00    3.50    4.00    4.50
              *
              *

1391          KK     78A
1392          KM  BASIN 78A
1393          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1394          KM  L=     3.3  Lca=     1.3   S=   30.2  Kn= .090  LAG= 118.0
1395          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1396          BA    1.88
1397          LG     .35     .36    5.00     .27     .00
1398          UI     54.     54.     54.     54.     54.    124.    176.    203.    227.    252.
1399          UI    268.    290.    305.    322.    342.    366.    396.    417.    451.    515.
1400          UI    612.    641.    716.    643.    579.    531.    494.    464.    437.    417.
1401          UI    385.    356.    334.    315.    290.    270.    255.    233.    206.    159.
1402          UI    153.     95.     95.     95.     88.     88.     88.     65.     54.     54.
1403          UI     54.     54.     45.     16.     16.     16.     16.     16.     16.     16.
1404          UI     16.     16.     16.     16.     16.     16.     16.     16.     16.     16.
1405          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
1406          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              *

1407          KK   78ATB   ROUTE
1408          KM  ROUTE FLOW FROM 78A TO 78B VIA WASH CROSSING COUNTY LINE
1409          RS       7    FLOW      -1
1410          RC   0.045   0.040   0.045    3500  0.0042    0.00
1411          RX    0.00  500.00  980.00 1003.00 1007.00 1031.00 1511.00 2011.00
1412          RY    4.50    3.50    3.00    0.00    0.00    3.00    3.50    4.50
              *
              *
1                                         HEC-1 INPUT                                        PAGE 33

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


1413          KK     78B   BASIN
1414          KM  BASIN 78B
1415          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1416          KM  L=0.60  Lca=0.40  S=31.7  Kn=0.050  LAG=21.7
1417          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1418          BA   0.396
1419          LG    0.30    0.17    6.80    0.15      15
1420          UI      61     254     371     576     682     457     315     156      90      48
1421          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.
              *
```

```
1422          KK    C78B COMBINE
1423          KM  COMBINE HYDROGRAPHS 78ATB AND 78B
1424          HC       2
              *
              *

1425          KK   78BTC   ROUTE
1426          KM  ROUTE 78B TO 78C VIA WASH CROSSING MOUNTAIN ROAD, THEN SOUTH ALONG
1427          KM  WESTERN EDGE OF 78C.
1428          RS       3    FLOW      -1
1429          RC   0.035   0.022   0.035    4500  0.0033    0.00
1430          RX    0.00  100.00  110.00  115.00  120.00  125.00  130.00  135.00
1431          RY    5.00    4.00    3.50    0.00    0.00    3.50    8.00    9.00
              *
              *

1432          KK     78C   BASIN
1433          KM  BASIN 78C
1434          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1435          KM  L=0.50  Lca=0.30  S=31.8  Kn=0.044  LAG=16.0
1436          KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1437          BA   0.288
1438          LG    0.26    0.16    7.58    0.11      24
1439          UI       0      99     313     547     610     364     167      77      25      19
1440          UI       0       0       0       0       0       0       0       0       0       0
1441          UI       0       0       0       0       0       0       0       0       0       0
1442          UI       0       0       0       0       0       0       0       0       0       0
1443          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1444          KK  RET78C  DIVERT
1445          KM  RETAIN 80% OF THE 100 YR 2 HR RUNOFF VOLUME
1446          DT  78CRET     1.6     0.0
1447          DI       0   10000
1448          DQ       0   10000
              *
              *
1                                        HEC-1 INPUT                                                PAGE 34

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


1449          KK    C78C COMBINE
1450          KM  COMBINE HYDROGRAPHS 78BTC AND 78C.
1451          HC       2
              *
              *

1452          KK   C78C2 COMBINE
1453          KM  COMBINE HYDROGRAPHS 77CT78 AND C78C.
              * KO     2
1454          HC       2
              *
              *

1455          KK  78CT79   ROUTE
1456          KM  ROUTE 78C TO 79A FROM SIGNAL BUTTE ROAD TO THE PROPERTY BOUNDARY APPROXIMATEL
1457          KM  1/4 MILE TO THE WEST OF SIGNAL BUTTE ROAD VIA ENGINEERED CHANNEL.
1458          RS       2    FLOW      -1
1459          RC   0.032   0.032   0.032    4215  0.0033    0.00
1460          RX    0.00    5.00   10.00   26.00   81.00   97.00  102.00  107.00
1461          RY    5.00    4.50    4.00    0.00    0.00    4.00    4.50    5.00
              *
              * ********************************************************************************
              *

1462          KK      20   BASIN
1463          KM    BASIN 20
1464          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1465          KM    L=1.23  Lca=0.41  S=14.6  Kn=0.044  LAG=29.4
1466          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1467          BA   0.270
1468          LG    0.24    0.15    7.94    0.11      33
1469          UI       0      31      81     150     193     258     377     296     228     173
1470          UI     121      62      47      31      13       9       9       9       0       0
1471          UI       0       0       0       0       0       0       0       0       0       0
1472          UI       0       0       0       0       0       0       0       0       0       0
1473          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1474          KK   RET20  DIVERT
1475          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1476          DT   20RET   25.76     0.0
1477          DI       0   10000
1478          DQ       0   10000
              *
              *

1479          KK   CP22B COMBINE
1480          KM  COMBINE HYDROGRAPHS 78CT79 AND RET20
              * KO     2
1481          HC       2
              *
              *
1                                        HEC-1 INPUT                                                PAGE 35

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


1482          KK      16   BASIN
1483          KM    BASIN 16
1484          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1485          KM    L=0.61  Lca=0.24  S=24.6  Kn=0.045  LAG=17.0
1486          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
```

```
1487          BA   0.099
1488          LG    0.25    0.17    6.76    0.16      31
1489          UI       0      29      97     159     215     135      75      31      14       6
1490          UI       6       0       0       0       0       0       0       0       0       0
1491          UI       0       0       0       0       0       0       0       0       0       0
1492          UI       0       0       0       0       0       0       0       0       0       0
1493          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1494          KK   RET16  DIVERT
1495          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1496          DT   16RET    7.60     0.0
1497          DI       0   10000
1498          DQ       0   10000
              *
              *

1499          KK      18   BASIN
1500          KM    BASIN 18
1501          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1502          KM    L=1.07  Lca=0.39  S=14.0  Kn=0.045  LAG=28.2
1503          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1504          BA   0.320
1505          LG    0.25    0.25    6.00    0.23      27
1506          UI       0      38     106     192     248     348     457     339     259     194
1507          UI     114      65      46      28      12      12      12       0       0       0
1508          UI       0       0       0       0       0       0       0       0       0       0
1509          UI       0       0       0       0       0       0       0       0       0       0
1510          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1511          KK   RET18  DIVERT
1512          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
1513          DT   18RET   24.70     0.0
1514          DI       0   10000
1515          DQ       0   10000
              *
              *

1516          KK   18T19   ROUTE
1517          KM  ROUTE FLOW FROM BASIN 18 TO BASIN 19
1518          RS       1    FLOW      -1
1519          RC   0.030   0.015   0.030    1040   .0040
1520          RX       0     7.5       8      38      43      73    73.5      81
1521          RY     0.8     0.5       0     0.6     0.6       0     0.5     0.8
              *
              *
```



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

1522          KK   CP19A COMBINE
1523          KM  COMBINE HYDROGRAPHS RET16 AND 18T19
              * KO     2
1524          HC       2
              *
              *

1525          KK      19   BASIN
1526          KM    BASIN 19
1527          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1528          KM    L=0.62  Lca=0.24  S=16.1  Kn=0.043  LAG=17.7
1529          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1530          BA   0.138
1531          LG    0.24    0.15    8.36    0.08      39
1532          UI       0      37     125     198     297     195     119      49      26       8
1533          UI       8       0       0       0       0       0       0       0       0       0
1534          UI       0       0       0       0       0       0       0       0       0       0
1535          UI       0       0       0       0       0       0       0       0       0       0
1536          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

1537          KK   RET19  DIVERT
1538          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
              * KO     2
1539          DT   19RET    11.3     0.0
1540          DI       0   10000
1541          DQ       0   10000
              *
              *

1542          KK   CP19B COMBINE
1543          KM  COMBINE HYDROGRAPHS CP19A AND RET19.
1544          HC       2
              *
              *

1545          KK      17   BASIN
1546          KM    BASIN 17
1547          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1548          KM    L=0.92  Lca=0.47  S=19.6  Kn=0.042  LAG=25.0
1549          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1550          BA   0.141
1551          LG    0.25    0.25    4.08    0.55      33
1552          UI       0      19      64     104     139     220     184     135      97      53
1553          UI      32      19       8       6       6       0       0       0       0       0
1554          UI       0       0       0       0       0       0       0       0       0       0
1555          UI       0       0       0       0       0       0       0       0       0       0
1556          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
```

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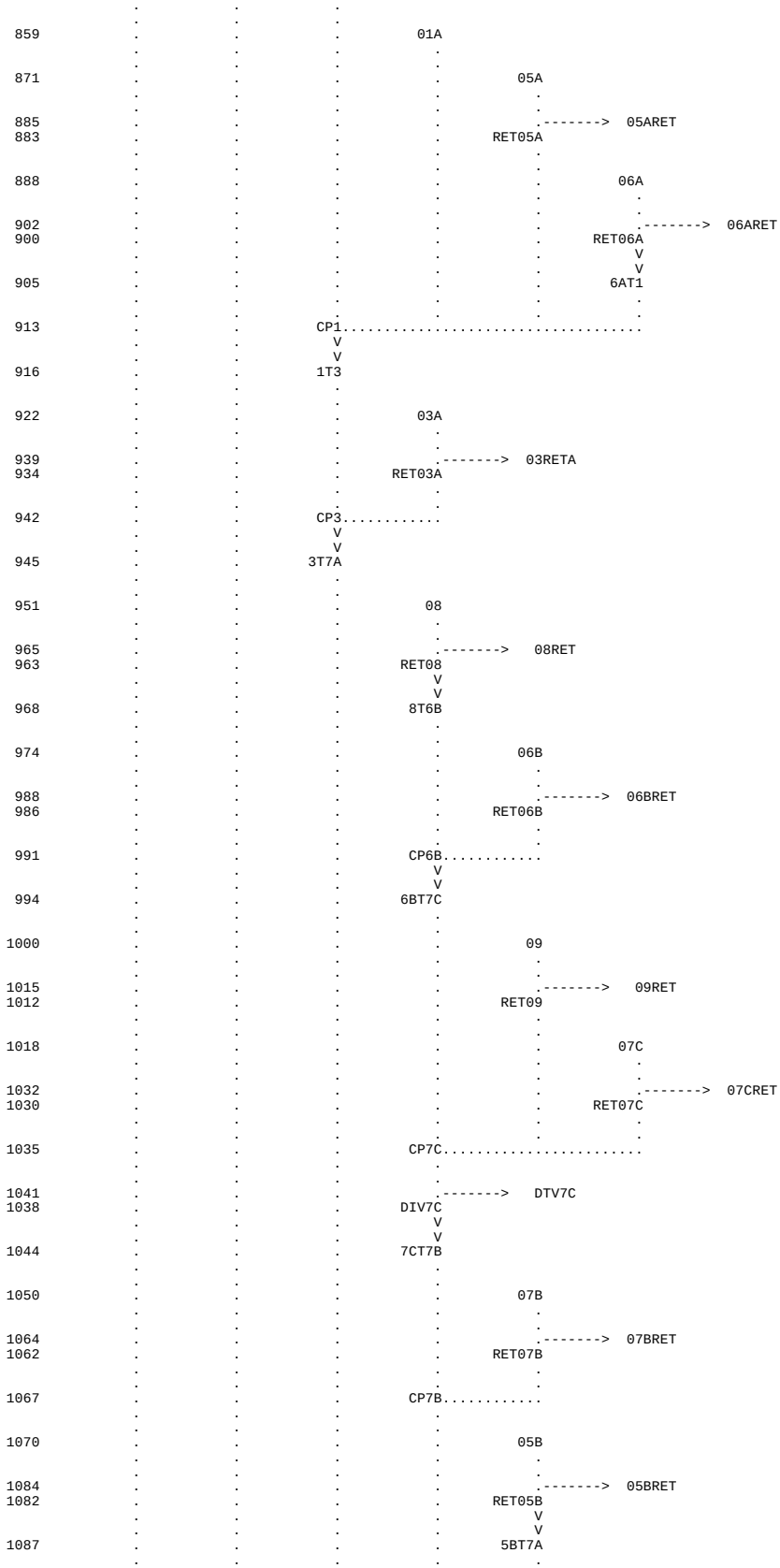
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          1557          KK   RET17  DIVERT
          1558          KM   RETAIN 100 YR 2 HR RUNOFF VOLUME
                        * KO     2
          1559          DT   17RET   12.74     0.0
          1560          DI       0   10000
          1561          DQ       0   10000
                        *
          1562          ZZ
1
               SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    652         04A
                  .
                  .
    666           .-------->  04ARET
    664       RET04A
                  .
                  .
    669           .          75
                  .           .
                  .           .
    681         CP23.............
                  .
                  .
    684           .         73A
                  .          V
                  .          V
    698           .       73ATB
                  .           .
                  .           .
    705           .           .         73B
                  .           .          .
                  .           .          .
    716           .           .          .-------->  73BRET
    714           .           .      RET73B
                  .           .          .
                  .           .          .
    719           .       CP73B.............
                  .          V
                  .          V
    722           .       73BTC
                  .           .
                  .           .
    729           .           .         73C
                  .           .          .
                  .           .          .
    741           .           .          .-------->  73CRET
    739           .           .      RET73C
                  .           .          .
                  .           .          .
    744           .       CP73C.............
                  .          V
                  .          V
    747           .      73T74C
                  .           .
                  .           .
    754           .           .         74A
                  .           .          V
                  .           .          V
    768           .           .       74ATB
                  .           .          .
                  .           .          .
    776           .           .          .         74B
                  .           .          .          .
                  .           .          .          .
    788           .           .          .          .-------->  74BRET
    786           .           .          .      RET74B
                  .           .          .          .
                  .           .          .          .
    791           .           .       CP74B.............
                  .           .          V
                  .           .          V
    794           .           .       74BTC
                  .           .          .
                  .           .          .
    801           .           .          .         74C
                  .           .          .          .
                  .           .          .          .
    813           .           .          .          .-------->  74CRET
    811           .           .          .      RET74C
                  .           .          .          .
                  .           .          .          .
    816           .       CP74C.........................
                  .          .
                  .          .
    823           .          .-------->  10BRET
    819           .      RET10B
                  .          V
                  .          V
    826           .      10BT75
                  .           .
                  .           .
    835           .           .         02B
                  .           .          .
                  .           .          .
    849           .           .          .-------->  02BRET
    847           .           .      RET02B
                  .           .          V
                  .           .          V
    852           .           .        2BT1
```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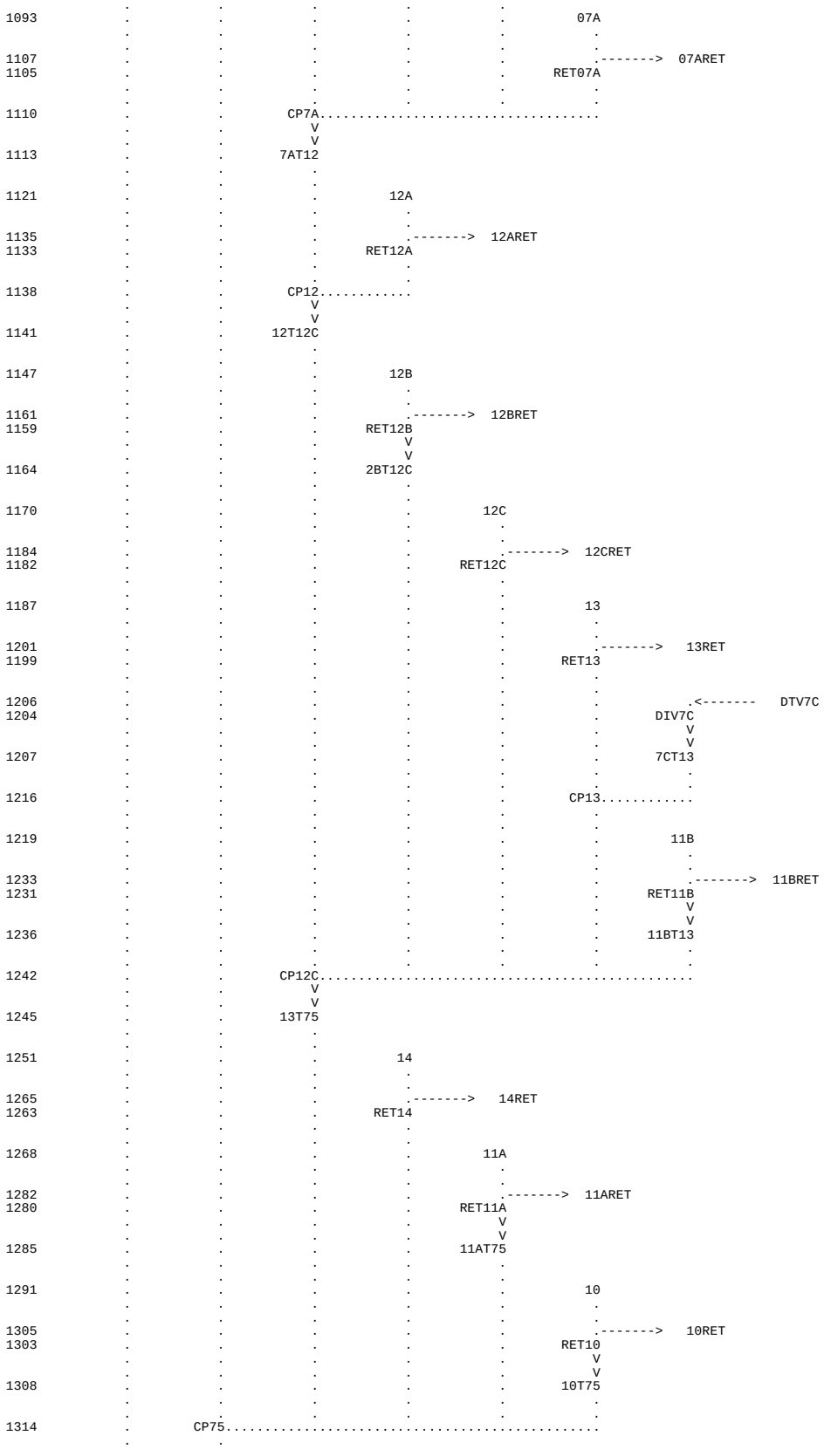
871 05A
885 05ARET
883 RET05A
888 06A
902 06ARET
900 RET06A
905 6AT1
913 CP1
916 1T3
922 03A
939 03RETA
934 RET03A
942 CP3
945 3T7A
951 08
965 08RET
963 RET08
968 8T6B
974 06B
988 06BRET
986 RET06B
991 CP6B
994 6BT7C
1000 09
1015 09RET
1012 RET09
1018 07C
1032 07CRET
1030 RET07C
1035 CP7C
1041 DTV7C
1038 DIV7C
1044 7CT7B
1050 07B
1064 07BRET
1062 RET07B
1067 CP7B
1070 05B
1084 05BRET
1082 RET05B
1087 5BT7A


1093
07A
1107
07ARET
1105
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1110
CP7A
1113
7AT12
1121
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RET12A
1138
CP12
1141
12T12C
1147
12B
1161
12BRET
1159
RET12B
1164
2BT12C
1170
12C
1184
12CRET
1182
RET12C
1187
13
1201
13RET
1199
RET13
1206
DTV7C
1204
DIV7C
1207
7CT13
1216
CP13
1219
11B
1233
11BRET
1231
RET11B
1236
11BT13
1242
CP12C
1245
13T75
1251
14
1265
14RET
1263
RET14
1268
11A
1282
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RET10
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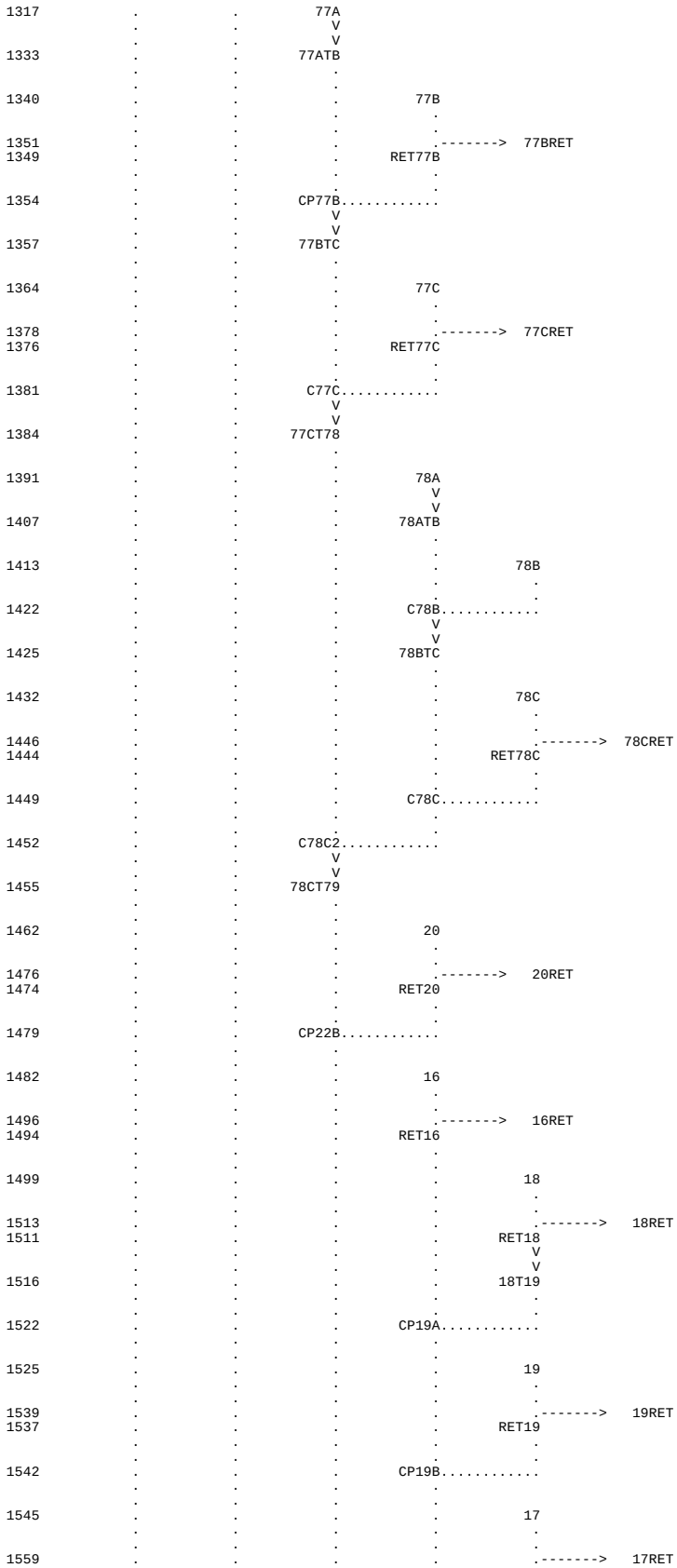
10T75
1314
CP75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RET77B
1354
CP77B
1357
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1364
77C
1378
77CRET
1376
RET77C
1381
C77C
1384
77CT78
1391
78A
1407
78ATB
1413
78B
1422
C78B
1425
78BTC
1432
78C
1446
78CRET
1444
RET78C
1449
C78C
1452
C78C2
1455
78CT79
1462
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RET16
1499
18
1513
18RET
1511
RET18
1516
18T19
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CP19A
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19
1539
19RET
1537
RET19
1542
CP19B
1545
17
1559
17RET

```
  1557          .          .          .          .       RET17

 (***) 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   06DEC19  TIME  15:18:14  *                                                *            (916) 756-1104
*
 *                                      *                                                *
*
 ****************************************
****************************************
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FILE: DU2INT.DAT

MODEL REVISED: 12-6-2019

PROJECT: MASTER DRAINAGE REPORT FOR DU 2 AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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 2, HAVE BEEN UPDATED TO REFLECT DETAILED PLANNING.
THE UNDEVELOPED PORTION OF DU 5N AND 6N HAS BEEN REVISED TO REMAIN AS EXISTING LAND USE.LAND USE FOR DU 1 HAS BEEN REVISED TO REMAIN AS EXISTING LAND USE FOR THIS INTERIM CONDITION.
THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES ONSITE MODELING FOR THOSE DEVELOPMENT UNITS THAT HAVE BEEN CONSTRUCTED, PERMITTED, OR WHICH HAVE BEEN MASTER PLANNED. THIS INCLUDES:DU 3/4, 3S, 7N, 8/9 AND PORTIONS OF 5N AND 6N. THE REMAINING SUBBASINS ARE MODELED AS EXISTING LOW DENSITY PROVING GROUNDS.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVE MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2019\195036\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 2 MP\HYDROLOGY\PROPOSED\DU2INT.DAT

****

FILE: DU34INT.DAT

MODEL REVISED: 12-5-2019

PROJECT: MASTER DRAINAGE REPORT FOR DU 3/4 AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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 3/4, HAVE BEEN UPDATED TO REFLECT DETAILED PLANNING.
THE UNDEVELOPED PORTION OF DU 5N AND 6N HAS BEEN REVISED TO REMAIN AS EXISTING LAND USE.
LAND USES FOR DU 1 AND 2 HAVE BEEN REVISED TO REMAIN AS EXISTING LAND USE FOR THIS INTERIM CONDITION. THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES ONSITE MODELING FOR THE FOLLOWING DEVELOPMENT UNITS WHICH HAVE HAD DETAILED MASTER PLANS PREPARED, INCLUDING: DU 8/9, 3S, 7N, 5N, 6N, AND 6S. THE REMAINING ONSITE IS CONTEMPLATED AS EXISTING LAND USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVE MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2019\195036\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 3-4 MP UPDATE\HYDROLOGY\PROPOSED\DU34INT.DAT

****

FILE: DU34INT.DAT

MODEL REVISED: 9-25-2017

PROJECT: MASTER DRAINAGE REPORT FOR DU 3/4 AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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 3/4, 5N, AND 6N HAVE BEEN UPDATED TO REFLECT DETAILED PLANNING.
LAND USES FOR DU 1 AND 2 HAVE BEEN REVISED TO REMAIN AS EXISTING LAND USE FOR THIS INTERIM CONDITION. THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES ONSITE MODELING FOR THE FOLLOWING DEVELOPMENT

UNITS WHICH HAVE HAD DETAILED MASTER PLANS PREPARED, INCLUDING:
DU 8/9, 3S, 7N, 5N, 6N, AND 6S. THE REMAINING ONSITE IS CONTEMPLATED
AS EXISTING LAND USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVE MCKEE, P.E.

FILE PATH:
Z:\EASTMARK\2017\174708\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 3-4 MP UPDATE\HYDROLOGY\PROPOSED\DU34INT.DAT

****

FILE: DU56INT.DAT

MODEL REVISED: 4-10-2017

PROJECT: MASTER DRAINAGE REPORT FOR DU 5, 5N, AND 6 SOUTH AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO
OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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 5,5N,6S,
6N, AND PARCELS 3/4-1 THROUGH 3/4-4 WITHIN DU 3/4 HAVE BEEN UPDATED
TO REFLECT DETAILED PLANNING. LAND USES FOR DU 1, 2, AND THE REMAINING
DU 3/4 HAVE BEEN REVISED TO REMAIN AS EXISTING LAND USE FOR THIS
INTERIM CONDITION. THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES
ONSITE MODELING FOR THE FOLLOWING DEVELOPMENT UNITS WHICH HAVE HAD
DETAILED MASTER PLANS PREPARED, INCLUDING: DU 8/9, 3S, AND 7N.
THE REMAINING ONSITE IS CONTEMPLATED AS EXISTING LAND USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVE MCKEE, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2016\164528\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 5-5N-6S MASTER PLAN\HYDROLOGY\DU56INT.DAT

****

FILE: DU6SINT.DAT

MODEL REVISED: 10-1-2015

PROJECT: MASTER DRAINAGE REPORT FOR DU 6 SOUTH AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO
OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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 6S AND
PHASE 1 WITHIN PARCEL 10 OF DU 3/4 HAVE BEEN UPDATED TO REFLECT
DETAILED PLANNING. LAND USES FOR DU 5E,THE REMAINING DU 3/4, AND
THE UNDEVELOPED PORTION OF DU 6N HAS BEEN REVISED TO REMAIN AS
EXISTING LAND USE FOR THIS INTERIM CONDITION.
THIS IS AN INTERIM CONDITION MODEL WHICH INCLUDES ONSITE MODELING
FOR THE FOLLOWING DEVELOPMENT UNITS WHICH HAVE HAD DETAILED MASTER
PLANS PREPARED, INCLUDING: DU 8/9, 3S, AND 7N. THE REMAINING ONSITE
IS CONTEMPLATED AS EXISTING LAND USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
STEVE MCKEE, E.I.T.

FILE PATH:
R:\MESA PROVING GROUNDS\2015\154382\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 6S MASTER PLAN\HYDROLOGY\DU6SINT.DAT

****

FILE: DU5EINT.DAT

MODEL REVISED: 04-21-2014

PROJECT: MASTER DRAINAGE REPORT FOR DU 5 EAST AT EASTMARK

THIS MODEL IS AN EXERPT OF THE FULL BUILD OUT MODEL. NO REFERENCE TO
OTHER MODELS IS REQUIRED TO RUN THIS MODEL.

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. THIS IS AN INTERIM CONDITION
MODEL WHICH INCLUDES ONSITE MODELING FOR AREAS THAT HAVE HAD DETAILED
MASTER PLANS PREPARED AND THE REMAINING ONSITE IS CONTEMPLATED AS
EXISTING LAND USE.

MODEL REVISED BY:
WOOD, PATEL & ASSOCIATES, INC.
DANIEL MATTHEWS, P.E.

FILE PATH:
R:\MESA PROVING GROUNDS\2014\144173\PROJECT SUPPORT\REPORTS\DRAINAGE\
DU 5E DRAINAGE MASTER PLAN\HYDROLOGY\DU5EINT.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

*******************************************************************************
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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\
MPG20RT2.DAT

****

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)

 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.                         ****
 ******************************************************************************
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   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
*****************************************************************************
 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)
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                    ****************************************************************************
                    **** 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

631 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

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

634 PI         PRECIPITATION PATTERN
                   .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       .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
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                   .00       .00       .00       .00       .00       .00       .00       .00

644 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
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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       .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
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                   .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

645 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
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                 .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                 .00       .00       .00       .00       .00       .00       .00       .00

646 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
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                 .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
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                 .00       .00       .00       .00       .00       .00       .00       .00

647 JD          INDEX STORM NO. 5
                     STRM       3.24  PRECIPITATION DEPTH
                     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
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                 .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
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648 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
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                      .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
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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

649 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
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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       .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
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650 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
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                      .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
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                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00       .00       .00       .00       .00       .00       .00

651 JD          INDEX STORM NO. 9
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                     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
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                     .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
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                     .00        .00        .00        .00        .00        .00        .00        .00
      WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .25

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00

                                                HYDROGRAPH MULTIPLIED BY   .00
      WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
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
+                                04A     112.   12.08           12.          4.          2.         .05

             DIVERSION TO
+                             04ARET     112.   12.08            9.          3.          1.         .05

             HYDROGRAPH AT
+                             RET04A      39.   12.33            4.          1.          1.         .05

             HYDROGRAPH AT
+                                 75     146.   12.50           27.          9.          4.         .44

             2 COMBINED AT
+                               CP23     164.   12.42           31.         11.          5.         .49

             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
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+	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	276.	12.17	32.	11.	5.	.16
+	DIVERSION TO	02BRET	276.	12.17	26.	7.	4.	.16
+	HYDROGRAPH AT	RET02B	77.	12.50	10.	3.	2.	.16
+	ROUTED TO	2BT1	16.	15.92	9.	3.	2.	.16
+	HYDROGRAPH AT	01A	0.	12.58	0.	0.	0.	.61
+	HYDROGRAPH AT	05A	281.	12.33	36.	11.	5.	.19
+	DIVERSION TO	05ARET	281.	12.33	27.	7.	3.	.19
+	HYDROGRAPH AT	RET05A	162.	12.58	13.	4.	2.	.19
+	HYDROGRAPH AT	06A	196.	12.25	19.	6.	3.	.12
+	DIVERSION TO	06ARET	196.	12.25	19.	5.	2.	.12
+	HYDROGRAPH AT	RET06A	1.	17.08	1.	0.	0.	.12
+	ROUTED TO	6AT1	1.	18.67	1.	0.	0.	.12
+	4 COMBINED AT	CP1	162.	12.58	20.	7.	3.	1.08
+	ROUTED TO	1T3	95.	12.83	19.	7.	3.	1.08

+	HYDROGRAPH AT 03A	112.	12.17	12.	4.	2.	.06
+	DIVERSION TO 03RETA	112.	12.17	12.	3.	2.	.06
+	HYDROGRAPH AT RET03A	2.	15.92	1.	0.	0.	.06
+	2 COMBINED AT CP3	95.	12.83	20.	7.	4.	1.13
+	ROUTED TO 3T7A	62.	13.17	19.	7.	4.	1.13
+	HYDROGRAPH AT 08	681.	12.58	110.	34.	16.	.64
+	DIVERSION TO 08RET	681.	12.58	89.	24.	12.	.64
+	HYDROGRAPH AT RET08	304.	12.92	32.	10.	5.	.64
+	ROUTED TO 8T6B	205.	13.08	32.	10.	5.	.64
+	HYDROGRAPH AT 06B	172.	12.25	19.	6.	3.	.10
+	DIVERSION TO 06BRET	172.	12.25	14.	4.	2.	.10
+	HYDROGRAPH AT RET06B	100.	12.42	7.	2.	1.	.10
+	2 COMBINED AT CP6B	214.	13.08	38.	12.	6.	.74
+	ROUTED TO 6BT7C	206.	13.17	38.	12.	6.	.74
+	HYDROGRAPH AT 09	141.	12.25	13.	4.	2.	.09
+	DIVERSION TO 09RET	141.	12.25	13.	4.	2.	.09
+	HYDROGRAPH AT RET09	0.	24.33	0.	0.	0.	.09
+	HYDROGRAPH AT 07C	238.	12.08	20.	6.	3.	.11
+	DIVERSION TO 07CRET	238.	12.08	20.	6.	3.	.11
+	HYDROGRAPH AT RET07C	0.	.00	0.	0.	0.	.11
+	3 COMBINED AT CP7C	206.	13.17	38.	12.	6.	.95
+	DIVERSION TO DTV7C	33.	12.50	22.	8.	4.	.95
+	HYDROGRAPH AT DIV7C	172.	13.17	16.	4.	2.	.95
+	ROUTED TO 7CT7B	146.	13.25	16.	4.	2.	.95
+	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	146.	13.25	16.	4.	2.	1.10
+	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	237.	12.25	28.	8.	4.	.13
+	DIVERSION TO 07ARET	237.	12.25	28.	8.	4.	.13
+	HYDROGRAPH AT RET07A	0.	.00	0.	0.	0.	.13
	4 COMBINED AT						

+	CP7A	189.	13.33	41.	13.	6.	2.52
+	ROUTED TO 7AT12	176.	13.42	41.	13.	6.	2.52
+	HYDROGRAPH AT 12A	248.	12.17	26.	8.	4.	.12
+	DIVERSION TO 12ARET	248.	12.17	20.	5.	3.	.12
+	HYDROGRAPH AT RET12A	72.	12.42	8.	3.	1.	.12
+	2 COMBINED AT CP12	185.	13.42	48.	16.	8.	2.63
+	ROUTED TO 12T12C	169.	13.58	47.	16.	8.	2.63
+	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	128.	12.25	15.	5.	2.	.08
+	DIVERSION TO 12CRET	128.	12.25	13.	4.	2.	.08
+	HYDROGRAPH AT RET12C	14.	12.75	3.	1.	1.	.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	22.	8.	4.	.95
+	ROUTED TO 7CT13	33.	13.67	22.	8.	4.	.95
+	2 COMBINED AT CP13	33.	13.67	22.	8.	4.	.12
+	HYDROGRAPH AT 11B	284.	12.33	38.	12.	6.	.22
+	DIVERSION TO 11BRET	284.	12.33	38.	11.	5.	.22
+	HYDROGRAPH AT RET11B	6.	15.33	4.	1.	1.	.22
+	ROUTED TO 11BT13	6.	15.67	4.	1.	1.	.22
+	5 COMBINED AT CP12C	209.	13.58	75.	26.	13.	3.13
+	ROUTED TO 13T75	205.	13.67	75.	26.	13.	3.13
+	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	234.	12.42	33.	10.	5.	.17
+	DIVERSION TO 10RET	234.	12.42	28.	8.	4.	.17
+	HYDROGRAPH AT RET10	67.	12.83	9.	3.	1.	.17

+	ROUTED TO 10T75	36.	13.42	9.	3.	1.	.17
+	5 COMBINED AT CP75	661.	14.00	291.	86.	41.	6.89
+	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

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

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
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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

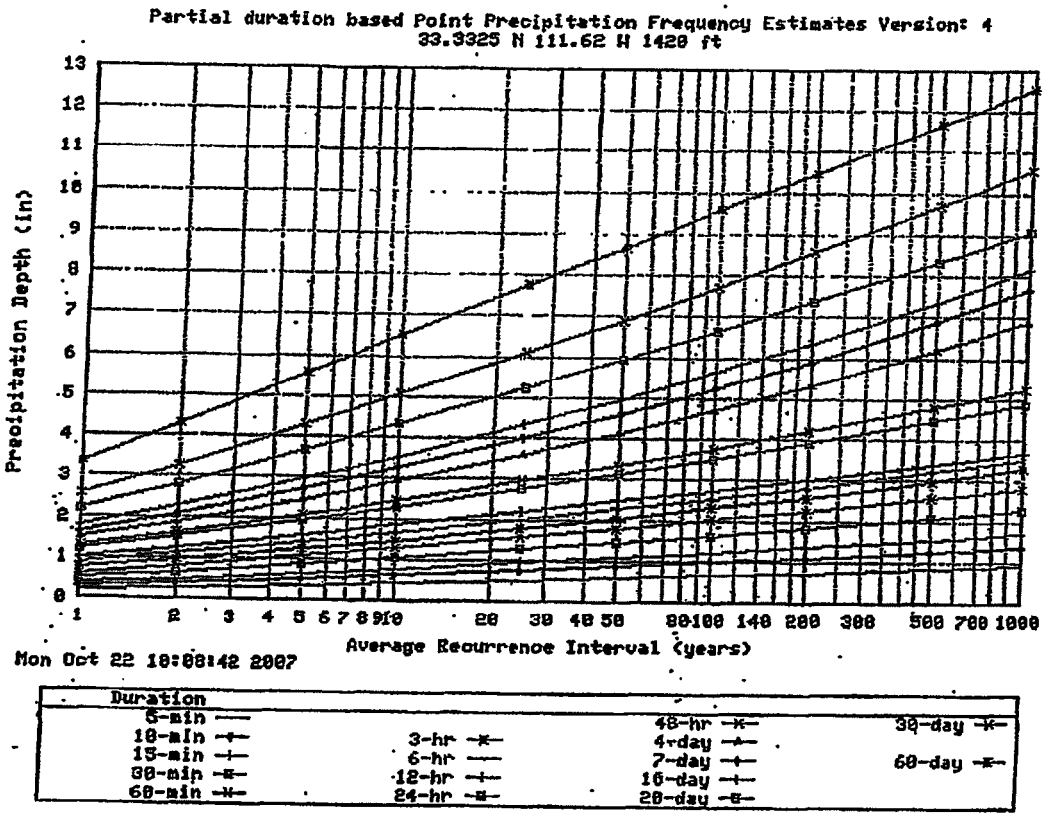
Precipitation Frequency Estimates (inches)

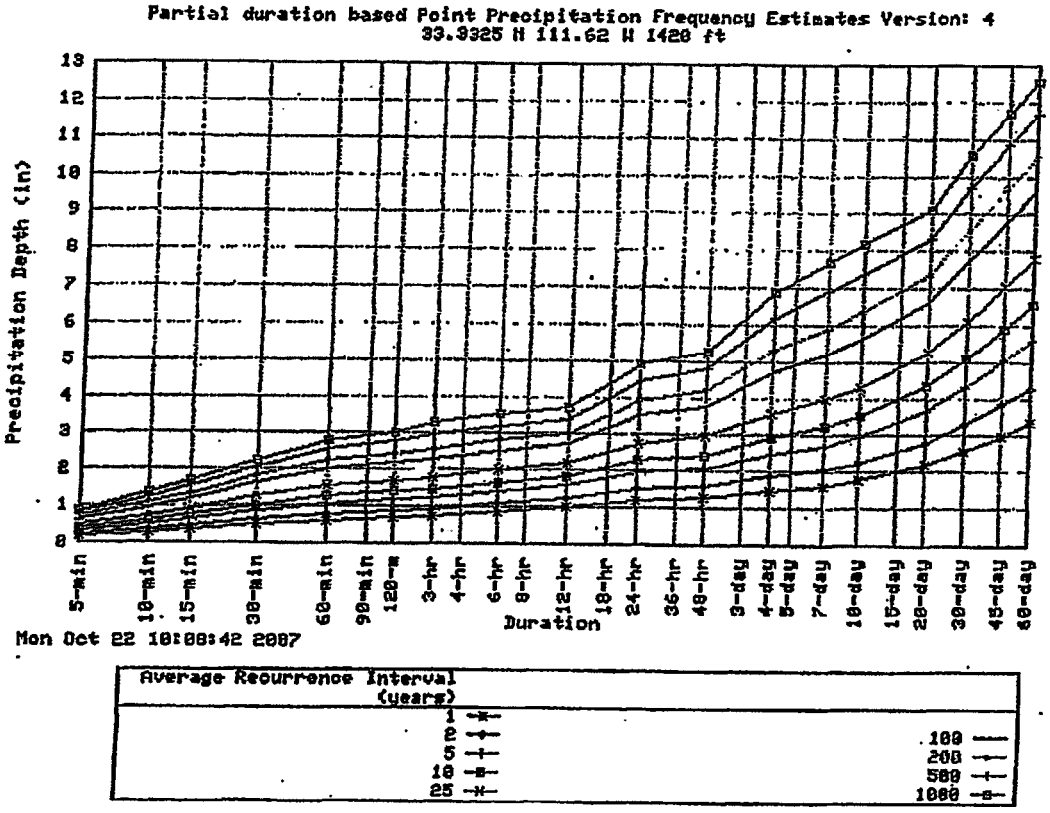
ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.19	0.29	0.36	0.48	0.60	0.68	0.73	0.88	0.99	1.21	1.27	1.47	1.62	1.77	2.19	2.56	2.99	3.33
2	0.25	0.38	0.47	0.63	0.78	0.89	0.93	1.11	1.26	1.52	1.61	1.87	2.07	2.25	2.81	3.28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

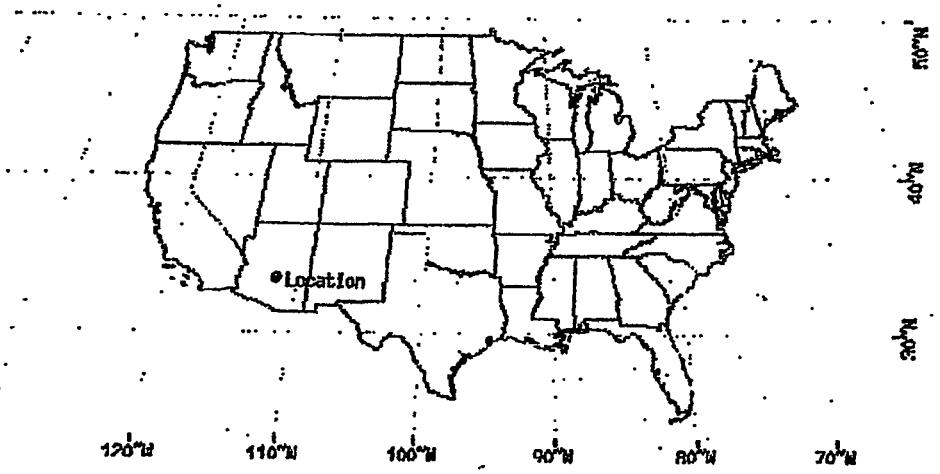
*** Lower bound of the 90% confidence interval**

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

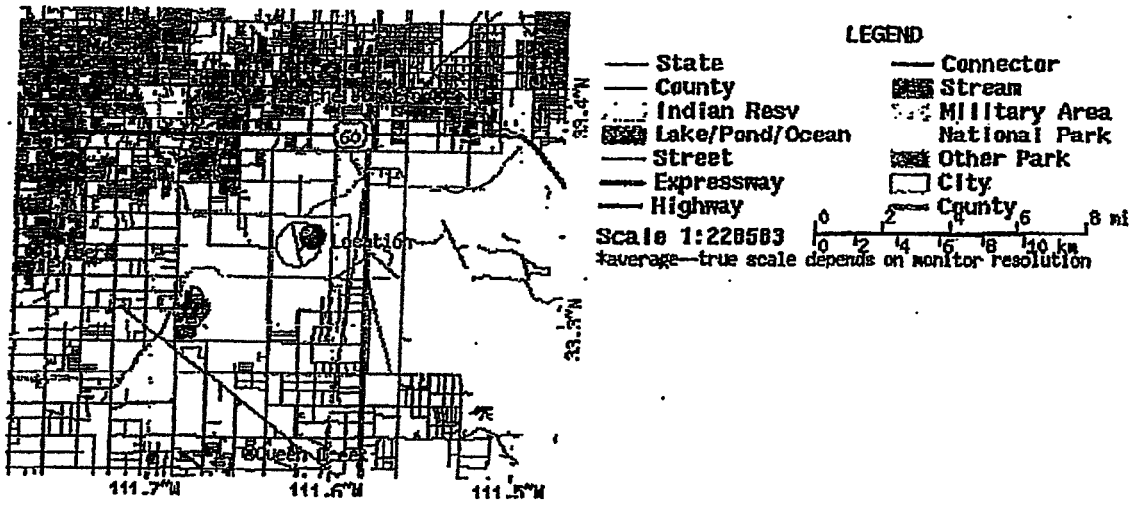
* The lower bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are less than.
** These precipitation frequency estimates are based on a partial duration maxima series. ARI is the Average Recurrence Interval.
Please refer 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

Interim Condition HEC-1 Sub-Basin Data

Table 1 - Interim Condition 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)
1A	16,985,070	389.92	0.609	7497	1.42	1.56	1458.0	1425.0	2326	0.44
2B	4,415,981	101.38	0.158	3937	0.75	0.83	1460.0	1448.0	923	0.17
3A	1,555,580	35.71	0.056	3201	0.61	0.67	1432.0	1417.0	935	0.18
4A	1,424,412	32.70	0.051	2569	0.49	0.54	1413.0	1400.0	1179	0.22
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	17,725,625	406.92	0.636	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	4,768,643	109.47	0.171	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
75	12,198,123	280.03	0.438	7131	1.35	1.49	1432.0	1400.0	1429	0.27
Totals	**138,162,887**	**3171.77**	**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
Totals	**231,994,503**	**5325.86**	**8.322**					

Notes:
1) 10% was added to onsite watercourse lengths to account for future roadway curvature.

Interim Condition HEC-1 Soil Data

Table 2 - Interim Condition 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.)
1A	1	Antho Sandy Loams	157198	3.61	0.006
	50	Estrella Loams	1936378	44.45	0.069
	75	Mohall Loam	13993650	321.25	0.502
	77	Mohall Clay Loam	897684	20.61	0.032
		TOTAL	**16984910**	**389.92**	**0.609**
2B	1	Antho Sandy Loams	490019	11.25	0.018
	75	Mohall Loam	3842428	88.21	0.137
	77	Mohall Clay Loam	83429	1.92	0.003
		TOTAL	**4415876**	**101.38**	**0.158**
3A	50	Estrella Loams	25534	0.59	0.001
	75	Mohall Loam	72037	1.65	0.003
	77	Mohall Clay Loam	1446628	33.21	0.052
	79	Mohall Clay	11851	0.26	0.0004
		TOTAL	**1556050**	**35.71**	**0.056**
4A	77	Mohall Clay Loam	319998	6.76	0.011
	79	Mohall Clay	879750	18.58	0.029
	112	Tremant Gravelly Sandy Loams	336283	7.10	0.011
		TOTAL	**1536031**	**32.44**	**0.051**
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	0.0010
		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	2017581	46.32	0.072
	77	Mohall Clay Loam	5602226	128.60	0.201
	78	Mohall Clay Loam, Calcareous Solum	274476	6.30	0.010
	1	Antho Sandy Loams	517798	11.89	0.019
	112	Tremant Gravelly Sandy Loams	2090961	48.00	0.075
		TOTAL	**17725625**	**406.92**	**0.636**
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	175566	4.03	0.006
	77	Mohall Clay Loam	2610330	59.92	0.094
	2	Antho Gravelly Sandy Loams	491227	11.28	0.018
	50	Estrella Loams	1201903	27.59	0.043
	115	Tremant-Antho Complex, 1% to 5% slopes	8070	0.19	0.0003
	1	Antho Sandy Loams	281547	6.46	0.010
		TOTAL	**1491520**	**109.47**	**0.171**
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	0.0159
		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	0.0000
		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**
	50	Estrella Loams	0.16	0.0003
	2	Mohall Loam	12.11	0.019
	78	Mohall Clay Loam	40.04	0.063
		TOTAL	**52.31**	**0.082**
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	Gillman 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	Gillman 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
	112	Tremant Gravelly Sandy Loams	65.29	0.102
		TOTAL	**142.21**	**0.222**
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**
75	50	Estrella Loam	19.10	0.0298
	75	Mohall Loam	17.00	0.0266
	77	Mohall Clay Loam	179.81	0.2810
	79	Mohall Clay	61.55	0.0962
		TOTAL	**277.46**	**0.434**
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**

Interim Condition HEC-1 Land Use Data

Table 3 - Interim Condition 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
1A	16,985,070	389.9	0.6092	DU5N	DU-5E	389.9	Low Density (Proving Grounds)	16,984,044	389.9	0.6092	0.060
2B	4,415,981	101.4	0.1584	DU6N	DU-6A	86.5	Industrial	3,767,940	86.5	0.1352	0.040
				---	---	14.9	General Transportation	649,044	14.9	0.0233	0.035
3A	1,555,580	35.7	0.0558	DU5N	DU-5A	25.0	Industrial	1,089,000	25.0	0.0391	0.040
				---	---	5.7	Active Open Space	246,568	5.7	0.0089	0.050
				---	---	5.0	General Transportation	217,800	5.0	0.0078	0.035
4A	1,424,412	32.7	0.0511	DU2	DU-2A, DU-2B	32.7	High Density Residential (10-15 Du/Acre)	831,996	19.1	0.0298	0.030
							General Office	217,800	5.0	0.0078	0.035
							Active Open Space	78,408	1.8	0.0028	0.050
							General Transportation	296,208	6.8	0.0106	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
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 2	DU-2A	15.6	Medium Lot Residential (2-4 DU/Acre)	679,536	15.6	0.0244	0.045
					DU-2C	38.5	Medium Lot Residential (2-4 DU/Acre)	1,677,060	38.5	0.0602	0.045
						24.0	Medium Density Residential (5-10 DU/Acre)	1,045,440	24.0	0.0375	0.035
					DU-2D	2.9	Active Open Space	126,324	2.9	0.0045	0.050
					---	2.9	General Transportation	126,324	2.9	0.0045	0.035

Table 3 - Interim Condition 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
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	17,725,625	406.9	0.6358	DU6S	Parcel 6-3	16.9	General Commercial	736,164	16.9	0.0264	0.035
				DU7	Parcels 7-1 through 7-27	383.6	Medium Lot Residential (2-4 DU/Acre)	9,147,600	210.0	0.3281	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
10	4,768,643	109.5	0.1711	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	14.5	Medium Lot Residential (2-4 DU/Acre)	631,620	14.5	0.0227	0.045
					7-4	5.4	Medium Lot Residential (2-4 DU/Acre)	235,224	5.4	0.0084	0.045
					7-19	1.7	Small Lot Residential (4-6 DU/Acre)	74,052	1.7	0.0027	0.040
					7-20	6.7	Small Lot Residential (4-6 DU/Acre)	291,852	6.7	0.0105	0.040
					7-21	20.0	Small Lot Residential (4-6 DU/Acre)	871,200	20.0	0.0313	0.040
					--	26.0	General Transportation	119,210	26.0	0.0406	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

Table 3 - Interim Condition 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
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	DU2	DU-2B	14.7	Medium Density Residential (5-10 DU/Acre)	640,332	14.7	0.0230	0.035
						6.3	Very High Density Residential (>15 DU/Acre)	274,428	6.3	0.0098	0.025
					DU-2E	9.1	Medium Density Residential (5-10 DU/Acre)	396,396	9.1	0.0142	0.035
						12.8	Small Lot Residential (4-6 DU/Acre)	557,568	12.8	0.0200	0.040
						9.0	Medium Lot Residential (2-4 DU/Acre)	392,040	9.0	0.0141	0.045
				DU3/4	3/4-34	14.7	Very High Density Residential (>15 DU/Acre)	640,332	14.7	0.0230	0.025
						5.1	General Commercial	222,156	5.1	0.0080	0.035
				--	--	3.2	General Transportation	139,392	3.2	0.0050	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	18.7	General Commercial	814,572	18.7	0.0292	0.035
					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
13	3,372,581	77.4	0.1209	DU3/4	3/4-33	6.9	Small Lot Residential (4-6 DU/Acre)	300,564	6.9	0.0108	0.040
					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

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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
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 3 - Interim Condition 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
75	12,198,123	280.0	0.438	---	---	---	Low Density (Proving Grounds)	12,198,123	280.0	0.4375	0.060
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

Interim Condition HEC-1 Routing Data

Table 4 - Interim Condition 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
2BT1	12	Normal Depth	0.032	0.032	0.032	4908	0.0045	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
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	0.0080	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

Interim Condition Onsite Retention Volume Summary

Table 5 - Interim Condition 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 (North of the Powerline Floodway)

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)							
RET02B[1]	DU 6N	2B	101.4	DU-6A	86.5	0.90	100-Year, 2-Hour	16.66	16.66	14.45	14.45	16.66
				---	14.9					--		
RET03	DU 5N	3A	35.7	DU-5A	25	0.86	100-Year, 24-Hour	8.98	8.98	6.87	6.87	6.87
				---	5.7					--		
				---	5					--		
RET04A	DU 2	4A	32.7	DU-2A, DU-2B	32.7	0.86	100-Year, 24-Hour	5.13	5.13	--	--	5.13
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 2	7A	83.9	DU-2A, DU-2C, DU-2D	83.9	0.69	100-Year, 24-Hour	16.94	16.94	0.00	0.00	16.94
RET07B	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	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	406.9	Parcel 6-3	16.9	0.90	100-Year, 2-Hour	2.77	52.83	--	45.29	48.06
				Parcels 7-1 through 7-27	383.6	0.70		49.00		45.29		
				---	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	109.5	7-1	15.9	0.75	100-Year, 2-Hour	14.98	14.98	12.82	15.09	15.09
				7-2	19.3							
				7-3	14.5							
				7-4	5.4							
				7-19	1.7							
				7-20	6.7							
				7-21	20							
				--	26					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	21.17	21.17	21.17
				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				
RET12A	DU 3/4 DU 2	12A	74.9	DU-2B	21.0	0.80	100-Year, 2-Hour	3.07	10.90	0.00	0.00	10.90
				DU-2E	30.9	0.72		4.05				
				3/4-34	19.8	0.90		3.25				
				--	3.2	0.90		0.53				
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						

Table 5 - Interim Condition 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 (North of the Powerline Floodway)

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)							
RET12C	DU 3/4	12C	48.2	3/4-10B	18.7	18.70	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	**282.53**	**282.53**	**214.85**	**214.85**	**276.21** **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.

Retention (South of the Powerline Floodway)

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 [5]	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[6]	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[6]	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**

5. Retention provided volumes for RET17 was taken from DU3 South Final Drainage Reports and improvement plans.
6. Retention provided volumes for RET19 and RET20 were taken from DU9 Final Drainage Reports and improvement plans.

Eastmark Required Retention Total =	**359.2**	**ac-ft**
Current Eastmark Provided Retention Total =	**263.3**	**ac-ft**
Current Eastmark Modeled Retention Total =	**358.3**	**ac-ft**

Post-Developed Rating Curve for CP7C

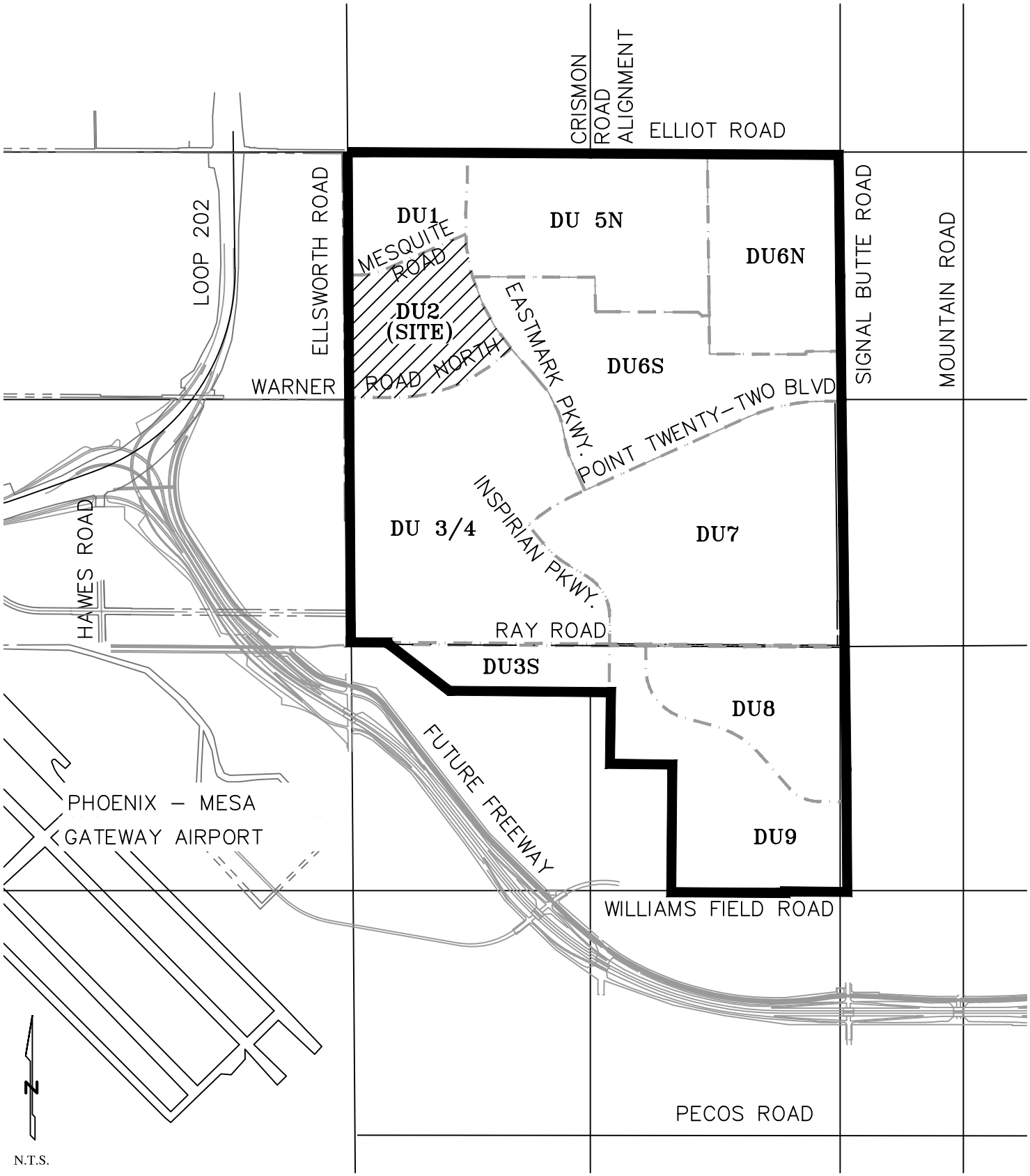
Table 6 - Post-Developed Rating Curve for CP7C

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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NOT FOR CONSTRUCTION
OR RECORDING

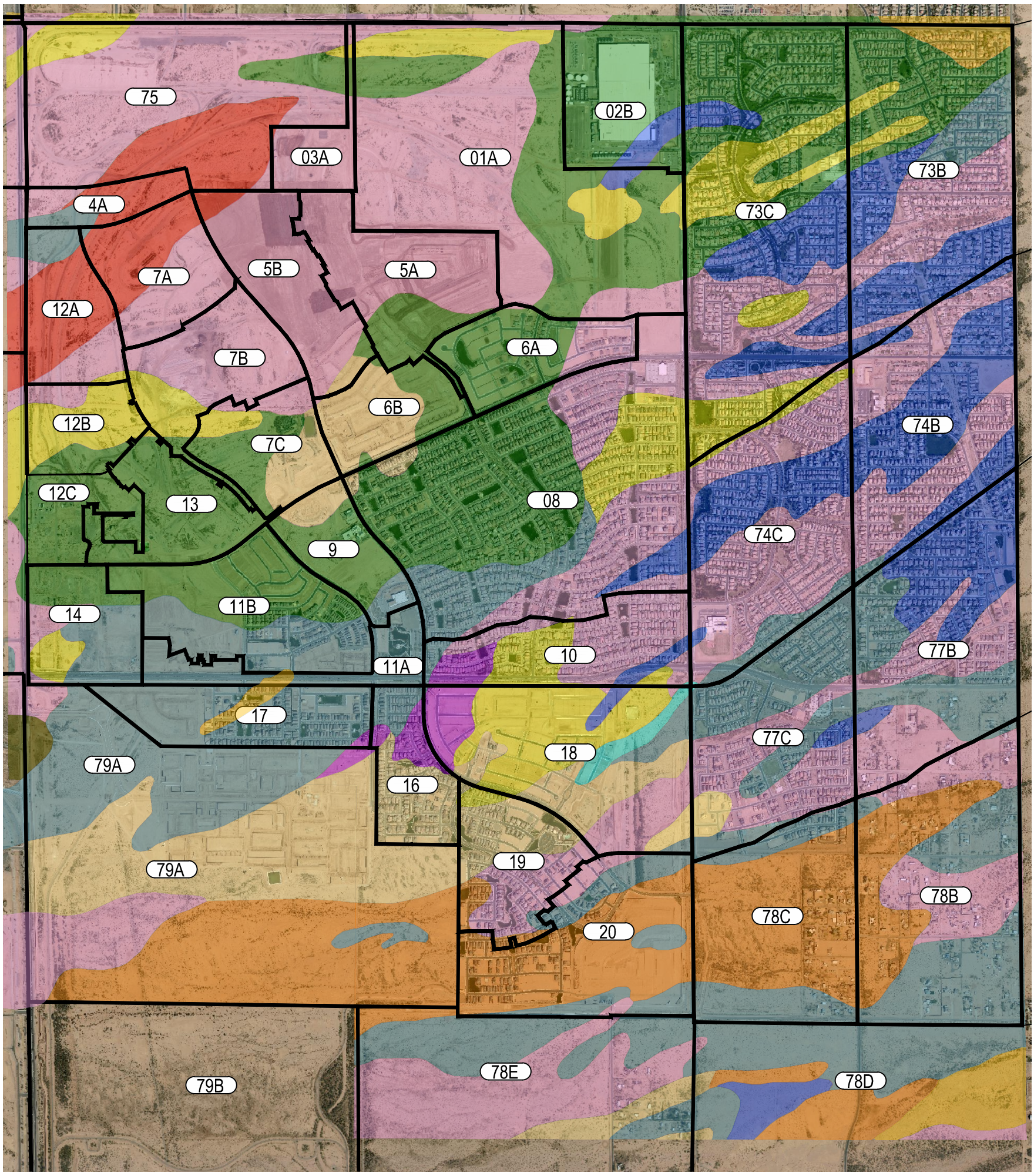
EXHIBIT 1: VICINITY MAP

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

1800 0 900 1800

Horz. 1 in. = 1800 ft.

NOT FOR CONSTRUCTION
OR RECORDING

EXHIBIT 2 - DU 2 SOILS MAP

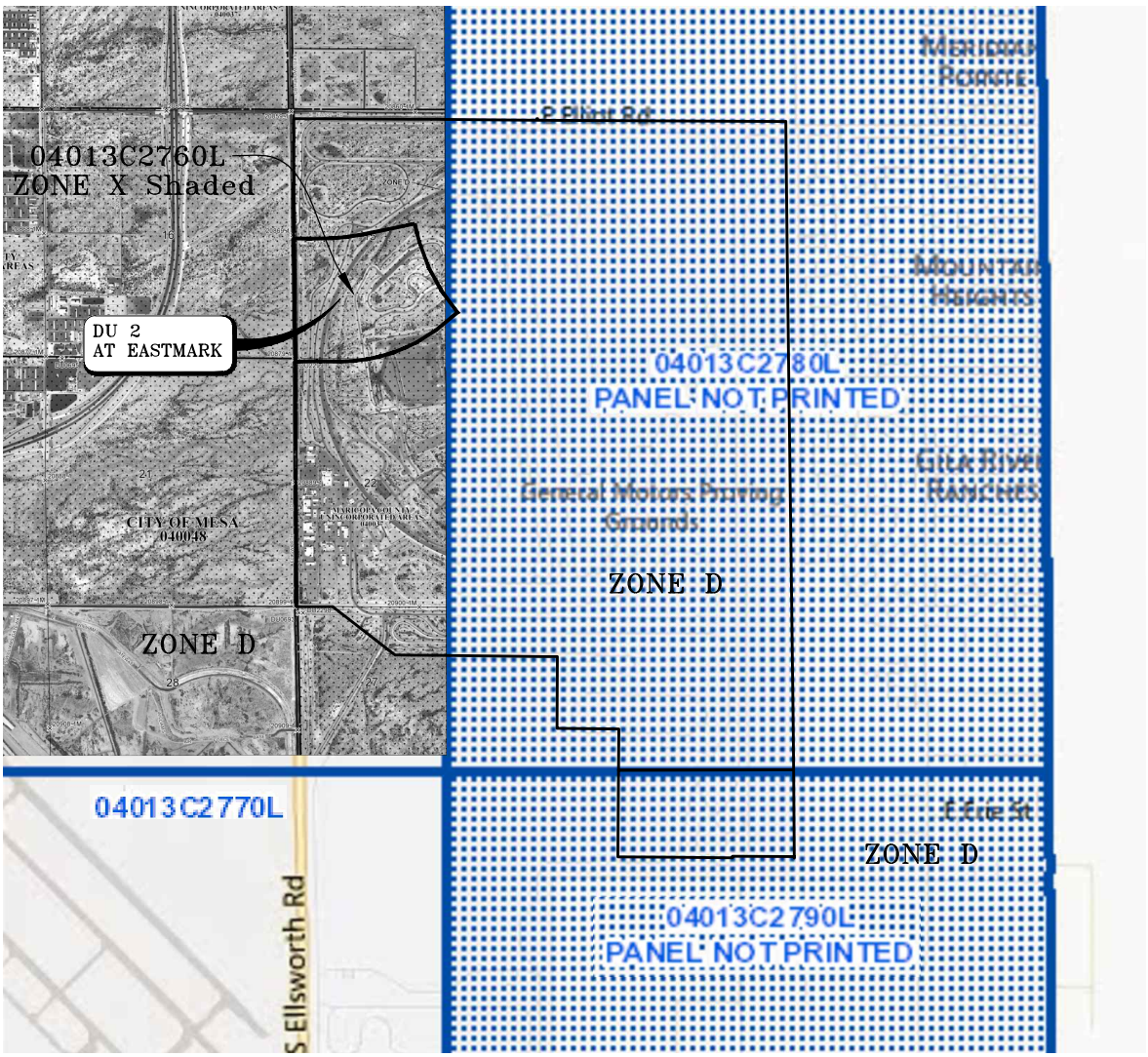
EASTMARK
MARICOPA COUNTY, ARIZONA

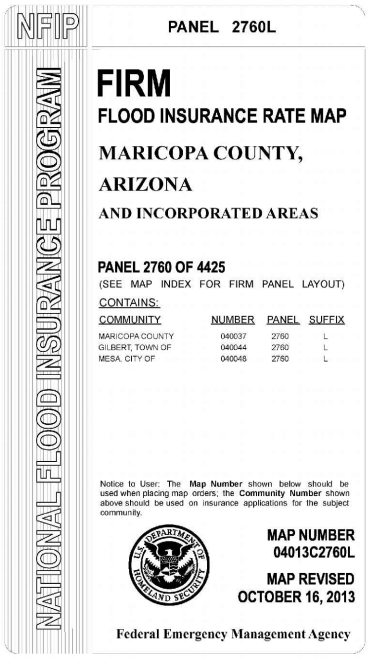
WOOD PATEL

Z:\Eastmark\2014\145036\Project Support\Reports\Drainage\DU 2 MPExhibits\ 5306-DU 2 EX 2-Soils Mapdwg - Dec 16,2014 9:48am

EXHIBIT 3

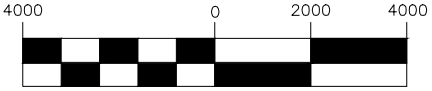
FLOOD INSURANCE RATE MAP





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:
Areas in which flood hazards are undetermined.



1 inch = 4000ft.

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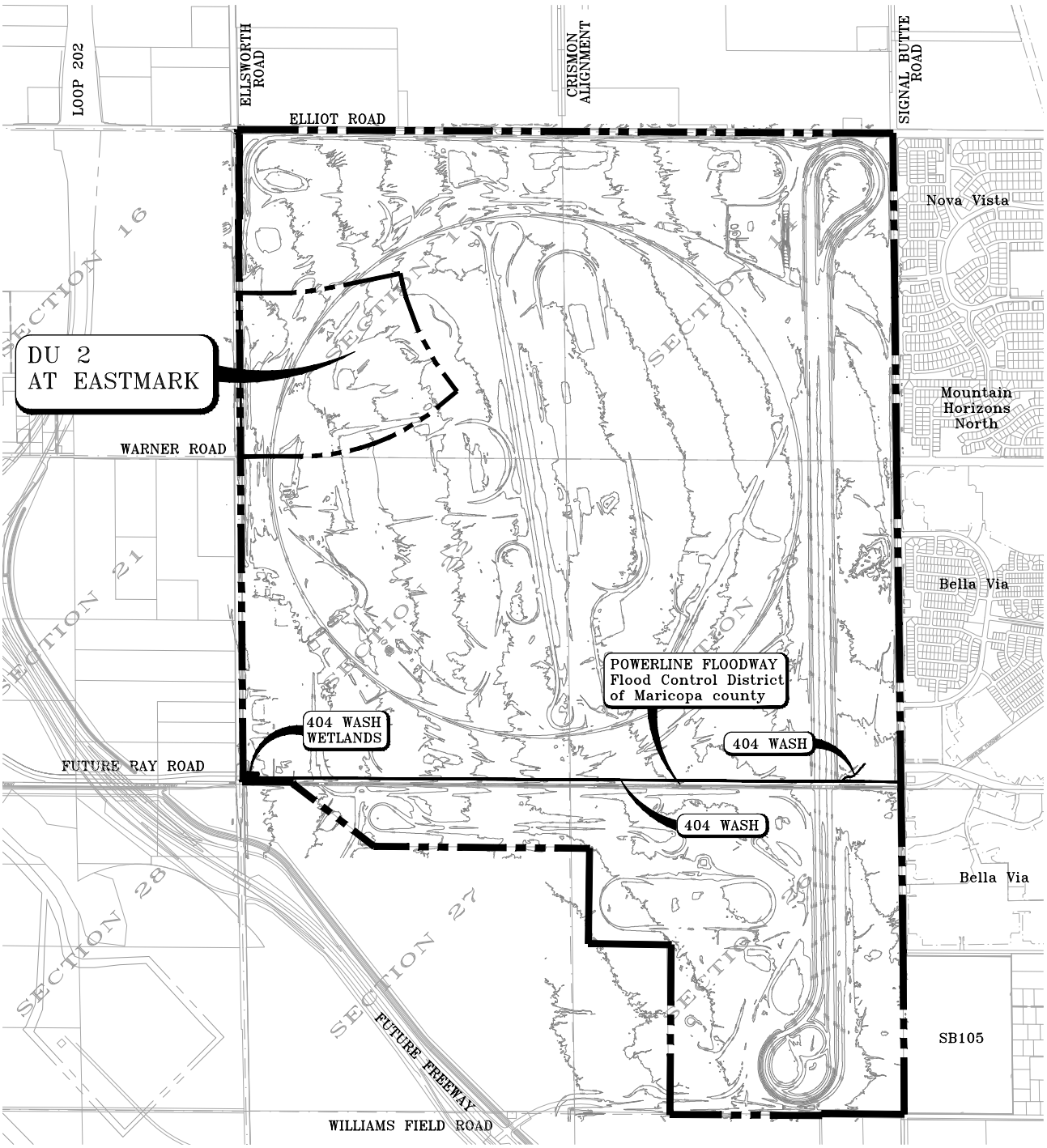
EXHIBIT 3: DU 2 FEMA FIRM MAP

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: DU 2 404 JURISDICTIONAL DELINEATION MAP

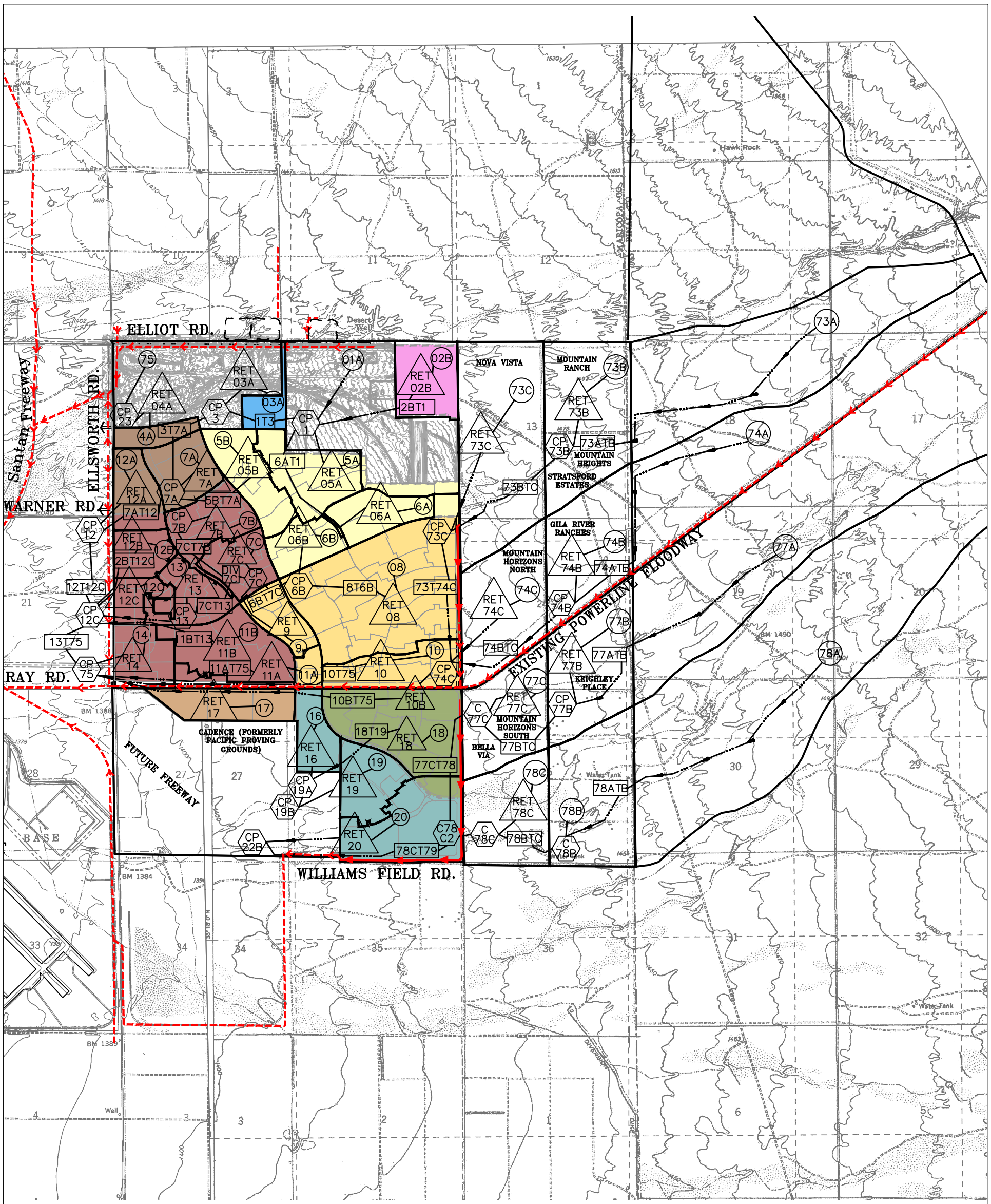
EASTMARK
MESA, ARIZONA

NOT FOR CONSTRUCTION
OR RECORDING

WOOD PATEL

EXHIBIT 5

INTERIM CONDITION HEC-1 SCHEMATIC



LOCATION ID	DISCHARGE (CFS)
CP75	661
RET17	1
CP19A	57
RET19	134
78CT79	940

LEGEND

- SUB-BASIN BOUNDARY
- EXISTING STORM DRAIN
- PROPOSED TEMPORARY BERM OR SWALE
- 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

DU 2, DU 3S, DU 3/4, DU 5N, DU 6N, DU 6S, DU 7, DU 8, DU-9

NOT FOR CONSTRUCTION OR RECORDING

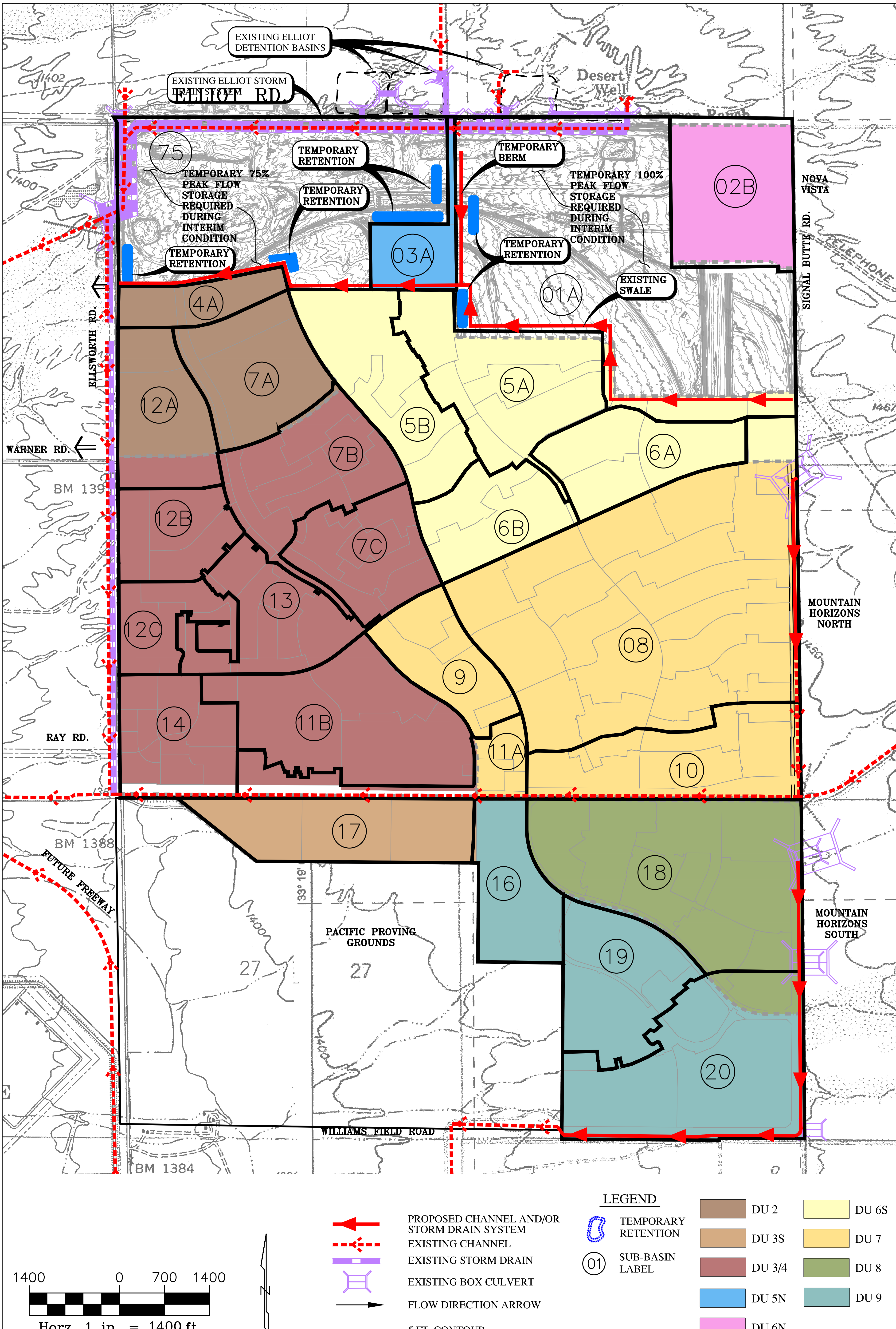
EXHIBIT 5: INTERIM CONDITION HEC-1 SCHEMATIC

DU 2 AT EASTMARK
MESA, ARIZONA

WOOD PATEL

EXHIBIT 6

INTERIM DRAINAGE MAP


EXISTING ELLIOT DETENTION BASINS
EXISTING ELLIOT STORM DRAIN SYSTEM
ELLIOT RD.
Desert Well
75
TEMPORARY 75% PEAK FLOW STORAGE REQUIRED DURING INTERIM CONDITION
TEMPORARY RETENTION
TEMPORARY RETENTION
TEMPORARY RETENTION
TEMPORARY BERM
TEMPORARY 100% PEAK FLOW STORAGE REQUIRED DURING INTERIM CONDITION
TEMPORARY RETENTION
EXISTING SWALE
NOVA VISTA
SIGNAL BUTTE RD.
TELEPHONE
ELLSWORTH RD.
WARNER RD.
BM 139
RAY RD.
BM 1388
FUTURE FREEWAY
BM 1384
PACIFIC PROVING GROUNDS
27
27
33° 19'
WILLIAMS FIELD ROAD
MOUNTAIN HORIZONS NORTH
MOUNTAIN HORIZONS SOUTH
03A
02B
01A
4A
7A
12A
5A
5B
6A
7B
12B
6B
7C
13
12C
08
9
14
11B
11A
10
17
16
18
19
20
1400
0
700
1400
Horz. 1 in. = 1400 ft.
PROPOSED CHANNEL AND/OR STORM DRAIN SYSTEM
EXISTING CHANNEL
EXISTING STORM DRAIN
EXISTING BOX CULVERT
FLOW DIRECTION ARROW
1430
5 FT. CONTOUR
LEGEND
TEMPORARY RETENTION
01
SUB-BASIN LABEL
DU 2
DU 3S
DU 3/4
DU 5N
DU 6N
DU 6S
DU 7
DU 8
DU 9

NOT FOR CONSTRUCTION
OR RECORDING

EXHIBIT 6: INTERIM DRAINAGE MAP

DU 2 AT EASTMARK
MESA, ARIZONA

WOOD PATEL