GLENDALE / PEORIA ADMPU
107TH AVENUE AND UNION HILLS DRIVE
DESIGN CONCEPT REPORT - PHASE 1
ANALYSIS AND RECOMMENDATIONS

CONTRACT FCD 2009C036
ASSIGNMENT NO. 1

Prepared for:
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

And:
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JUNE 2010 – DRAFT
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ANALYSIS AND RECOMMENDATIONS

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1. EXECUTIVE SUMMARY

The Glendale/Peoria Area Drainage Master Plan Update (ADMPU), 107th Avenue and Union Hills Drive Design Concept Report (DCR) is an update of the original Glendale / Peoria ADMPU and the Northwest Update. The DCR hydrology study is comprised of a watershed of approximately 8.6 square miles with the DCR area of interest being generally bound on the north by Beardsley Road, to the east by 107th Avenue, to the west by Agua Fria River and to the south by Bell Road.

The DCR has been commissioned by the Flood Control District of Maricopa County (FCD) in response to flooding complaints in area subdivisions and roadways near the 107th Ave. and Union Hills Drive intersection. The study area is located within three jurisdictions, the City of Peoria, the City of Surprise and Unincorporated Maricopa County. Specific areas of concern were the Lake Pleasant Mobile Home Estates, the Paradise Resort Travel Trailer Park, the Coyote Lakes development, 107th Avenue, Union Hills Drive, and 115th Avenue roadways and associated intersections. The purpose of the DCR is to evaluate area and regional flooding hazards and to make recommendations to the FCD if further analysis be performed to identify regional drainage system alternatives.

The hydrologic modeling methodologies outlined in the FCD Drainage Design Manual for Maricopa County, Arizona, Volume 1 Hydrology, November 2009, were applied to the study area. The hydrologic modeling was performed using the U.S. Army Corps of Engineers Flood Hydrograph Package (HEC-1). The model input parameters were generally prepared using the FCDMC's Drainage Design Management System for Windows (DDMSW Version 3.5.7) program.

The results of the hydrologic update, hydraulic analysis and field analysis were in concert with the flooding complaints received by the City of Peoria (COP) and the City Surprise (COS) for the areas discussed above. Additionally, the DCR determined the flood hazards appear to be largely caused by the fact the 107th Avenue, Union Hills Drive, and the subject developments do not have an organized storm drain system and rely upon overland flow and undersized roadside swales to convey storm water through the study area. Based on the findings discussed above, a recommendation to move forward with a Phase 2 alternatives analysis has been made to the Flood Control District of Maricopa County.

2. INTRODUCTION

a. Project Location

The overall study area for the Glendale/ Peoria Area Drainage Master Plan (ADMP) is approximately 80 square miles and includes portions of the Cities of Peoria, Glendale, Sun City, Youngtown, Phoenix, and unincorporated portions of Maricopa County. The original ADMP was completed in May 1987 by CDM inc. and JM Montgomery Inc. and was updated in May 2002 by Entellus (ADMPU) and again in May 2007 by Wood Patel (NWU) for the Flood Control District of Maricopa County (FCD).

The 107th Avenue and Union Hills Drive Phase 1 Design Concept Report (DCR) is comprised of a watershed of approximately 8.6 square miles with the DCR area of interest being generally bound on the north by Beardsley Road, to the east by 107th Avenue, to the west by Agua Fria River and to the south by Bell Road (see Figure 1 for the Location Map.)

b. Need and Purpose

The DCR has been commissioned by the Flood Control District of Maricopa County (FCD) in response to flooding complaints in the area subdivisions and roadways near the 107th Ave. and Union Hills Drive intersection. The study area is located within three jurisdictions, the City of Peoria, the City of Surprise and Unincorporated Maricopa County (see Figure 2 for the Annexation Map) . Specific areas of concern were the Lake Pleasant Mobile Home Estates, the Paradise Resort Travel Trail Park, the Coyote Lakes development, 107th Avenue, Union Hills Drive, and 115th Avenue roadways and associated intersections. The purpose of the DCR is to evaluate area and regional flooding hazards and to make recommendations to the FCD if further analysis be performed to identify regional drainage system alternatives.

c. Scope

The information and analysis presented in this report is a part of the scope of work performed by Goodwin and Marshall, Inc. for the FCD under Contract No. 2009C036. The scope includes aerial surveying and mapping, data collection, detailed review of existing studies, preparation of baseline hydrology and hydraulics, and modification to baseline hydrology in order to determine flows at specific areas of concern. Specifically, this study models the existing conditions 10 year – 6 hour and the 100 year – 6 hour storm event.

3. DATA COLLECTION AND PROJECT DATA

Various data was collected, reviewed and documented through the course of preparing the Design Concept Report. The information was obtained from the stakeholders or through research of public records. Please see Appendix "A" for the Data Collection Memo.

a. Aerial Topographic Survey / Datum

i. Aerial Topographic Survey

Based on the GIS data provided by the FCD it was determined that detailed topographic information sufficient to complete the Phase 1 analysis did not exist for the complete study area. Therefore, an aerial topographic survey was performed in conjunction with this analysis for the area generally located at 115th Avenue to ¾ mile east and Union Hills Drive to ¾ mile north. The aerial topographic survey was flown at an altitude sufficient to provide 1' contours and incorporates a minimum amount of planimetric features to complete Phase 1 of the work assignment. For the purposes of Phase 1 analysis, the aerial topography includes all planimetric features that are necessary to create the digital terrain model (DTM) required for producing the 1' contours. These features include curbs, gutters, creeks and break lines. The remaining planimetric features may be completed with the Phase 2 work assignment.

ii. Project Datum

The GIS information provided by the FCD is on NGVD datum however the project datum is NAVD 88 in order that the Aerial Topographic information may be utilized for the alternatives analysis and future design topography.

The project benchmark is:

Benchmark Held is a NGS control point

Designation= 1HB1 PID= AJ3858

State/County= Az/Maricopa

USGS Quad= Calderwood Butte (1981)

Location= 445 feet+/- Southwest of a parking lot at Deer Village Park on Deanna Drive east of 91st Avenue

Elevation= 1262.17 NAVD 88 Datum

Elevation=1260.30 NGVD 29 Datum (HELD)

b. Ownership / Maintenance Responsibility of Existing Roadway and Drainage Facilities

Through detailed discussions with the project stakeholders and review area final plats, annexation ordinances, and improvement plans, the ownership of the existing roadways and drainage facilities were determined to the best extent possible. A discussion the area roadways is included below.

i. 107th Avenue (Beardsley Road to Union Hills Drive)

107th Avenue is comprised of a total ROW width of 95 feet (40 ft. east of the section line and 55 ft. west of the section line). The roadway was annexed into The City of Peoria in 1977 and 1989 under Peoria Ordinance number 77-48 and 89-40. Based on the information above and discussions with the project stakeholders this roadway is owned and maintained by the City of Peoria.

ii. Union Hills Drive (107th Avenue to 111th Avenue)

Union Hills Drive is comprised of a total ROW width of 95 feet (40 ft. south of the section line and 55 ft. north of the section line). The north 55 ft. was annexed into the City of Peoria in 1977 under Peoria Ordinance number 77-48. The south 40 ft. of the Union Hills Drive roadway corridor appears to still lie within county jurisdiction. Based on the information above and discussions with the project stakeholders the ownership of the maintenance responsibilities for this section of roadway is unknown. The existing 30 ft. of pavement lies within the City of Peoria, however the south 40 ft. containing a roadside swale appears to lie within the county. However, according to Intergovernmental Agreement C-64-08-219-2-00 between the City of Surprise and Maricopa County, this south 40' from 115th Ave. to approximately 1,100 feet east of 111th Ave. will be annexed to the City of Surprise upon completion of the Union Hills Drive improvements. A resolution between the City of Peoria

and Maricopa County should be made to clarify this issue for the remainder of Union Hills Drive to 107th Ave.

iii. Union Hills Drive (111th Avenue to 113th Avenue)

Union Hills Drive is comprised of a varying ROW width through this quarter mile section. A 40 ft. ROW dedication was made south of the section line as part of the Canyon Ridge development and was annexed into the City of Surprise in 1997 under Ordinance No. 97-5. The north ROW tapers from 55 ft. at 111th Avenue to a width of 33 ft. at 113th Avenue and was annexed into the City of Peoria in 2003 under Ordinance No. 03-175. Based on the information above and discussions with the project stakeholders this roadway is owned by the two jurisdictions discussed above and maintenance responsibility is unknown. A resolution between the City of Peoria and the City of Surprise should be made to clarify this issue.

iv. Union Hills Drive (113th Avenue to 115th Avenue)

Union Hills Drive is comprised of a total ROW width of 77 ft. through this quarter mile section. A 40 ft. ROW dedication was made south of the section line as part of the Canyon Ridge development and was annexed into the City of Surprise in 1995 under Ordinance No. 95-14. The north 33 ft. of ROW appears to still lie within county jurisdiction. Based on the information above and discussions with the project stakeholders this roadway is owned by the two jurisdictions discussed above, and maintenance responsibility is unknown. A resolution between the City of Surprise and Maricopa County should be made to clarify this issue.

v. 115th Avenue (Beardsley Road to Union Hills Drive)

115th Avenue is comprised of a total ROW width of 77 ft. through this one mile section. A 33 ft. ROW dedication was made west of

the section line as part of the Coyote Lakes development and was annexed into the City of Surprise in 1980 and 1983 under Ordinance Nos. 80-2 and 83-8. The east 40 ft. of ROW appears to still lie within county jurisdiction. Based on the information above and discussions with the project stakeholders this roadway is owned by the two jurisdictions discussed above, however, is currently being maintained by the City of Surprise.

vi. 115th Avenue (Union Hills Drive to Bell Road)

115th Avenue is comprised of a total ROW width of 77 ft. through this one mile section. A 33 ft. ROW dedication was made west of the section line as part of the Coyote Lakes development and was annexed into the City of Surprise in 1980 and 1983 under Ordinance Nos. 80-2 and 83-8. The east 40 ft. of ROW was dedicated with Canyon Ridge development and was annexed into the City of Surprise in 1995 under Ordinance No. 95-14. Based on the information above and discussions with the project stakeholders this roadway is owned and maintained by the City of Surprise.

4. HYDROLOGY

a. Existing Studies

i. Glendale/Peoria ADMP Update

The Glendale/Peoria ADMPU was completed May 2002 by Entellus (ADMPU), for the FCD under Contract No. 99-44. The purpose of the ADMPU was to develop alternative solutions for the drainage problems, select the most desirable alternative solutions, and develop a preliminary concept (15%) design. New or modified existing drainage systems were recommended along Rose Garden Lane, Pinnacle Peak Road and Beardsley Road with the Northwest Region study area.

ii. Glendale/Peoria ADMPU Northwest Region Update

The Glendale/Peoria ADMPU Northwest Region Update Hydrologic Study was completed in May 2007 by Wood Patel (NWU) for the FCD under Contract No. 2005C021. The purpose of the NWU was to update the hydrologic modeling to address the impact of recent development, future development, and capital improvement projects on the watershed hydrology within the study limits.

Specifically, the study updated the existing and future conditions hydrologic models for the 10-year and 100-year, 6-hour storm and the 100-year, 24 hour storm. Existing conditions included funded CIP drainage improvements within the CIP drainage improvements within the watershed. Future conditions included planned CIP drainage improvements within the study area including the City of Peoria Happy Valley Road project, Pinnacle Peak Road improvements, Camino A Lago north, and Beardsley Road Channel projects. The land use for the future conditions model assumes a fully developed watershed based on the applicable City's current land use and zoning.

iii. Pinnacle Peak Road Hydrology (Wood Patel, 2010)

The Pinnacle Peak Road Hydrology is an ongoing study currently being finalized with the Pinnacle Peak Road Construction plans. The project is generally located along Pinnacle Peak Road from 99th Avenue west to the Agua Fria. The major elements for study are that the peak flow at 103rd Avenue is diverted to the south with a 10 cfs low-flow bypass into the wash through the Ironwood subdivision and the rest into two (2) basins in series located on the south of the Pinnacle Peak Road. The base hydrologic model is the HEC-1 model developed for the Glendale Peoria ADMPU Northwest Region Update (NWU) developed by Wood, Patel & Associates in 2007. The base model was then updated for land

use and existing flood control improvements as necessary. As required by the development agreement with the COP, the Camino A Lago development will convey flows from north of Pinnacle Peak Road and east of 99th Avenue to the south within their development. The base model was modified to reflect this change in concept for the Pinnacle Peak Road corridor.

For the recommended alternative, HEC-1 models were developed for existing conditions without CIP (capital improvement projects), for existing conditions with CIP, and for future conditions with CIP from the 100-year storm for the 6-hour and 24-hour durations.

b. Hydrologic Data

The NOAA 2 point rainfall values previously used in the ADMPU and NWU were also used in the Baseline and DCR models for the Glendale/Peoria ADMPU 107th Avenue and Union Hills Drive Design Concept Report. The design rainfall distribution is the Maricopa County local storm distribution for the 6-hour storm per the FCDMC's Drainage Design Manual. The Baseline hydrologic models utilize all sub-basin parameters, including Green and Ampt rainfall loss and Clark unit hydrograph parameters as found in the NWU model. Sub-basins that have been updated within the DCR hydrology model have been created using the same land use and soil data previously used in the ADMPU and NWU models as supplied by the FCDMC. Soil data for the area of concern within the DCR model can be found in Figure 3. Land use data for this area can be found on Figure 4. Physical parameters for these updated sub-basins were determined using aerial topography while hydrologic parameters were developed using FCDMC's DDMSW Version 3.5.7. Where retention was added to the DCR model, only 80% of the available volume was assumed to be effective and utilized in the model.

c. Baseline Hydrology Model

ADMPU / NWU

The Existing Conditions 10 and 100 year, 6 hour Baseline hydrologic models for the Glendale/Peoria ADMPU 107th Avenue and Union Hills Drive Design Concept Report Update were created using the Existing Conditions NWU 10 year and 100 year, 6 hour models. The first step taken in creating the Baseline model was to determine the watershed boundary relative to the discharge location of expressed importance to the FCD. This was achieved by examining basins, routings, and diversions to determine whether the rainfall runoff from each element ultimately traveled to the concentration point of concern at Bell Road & 115th Avenue (referenced as CA07B in the ADMPU model). The new watershed boundary can be seen in Plate 2. Elements for which this was found to be true were retained and the remaining components were removed from the model. There are four locations where flows are diverted and a portion of the flow ultimately discharges to concentration point CA07B and the other portion is directed out of the newly determined watershed for the DCR model. These diversions are named N11NP, N11KP, X5I, and D11DAS and can also be seen on Plate 2. Their hydrologic characteristics have been kept intact in the updated model while the diversion discharges have been removed. A drainage sub-area has also been established within the study watershed. The basins to the north and west of this sub-area ultimately discharge to the Agua Fria River. The basins within this sub-area ultimately discharge both to the Agua Fria River and also south to concentration point CA07B, therefore have not been removed from the model.

ADMPU / NWU Modification

Additional review of the NWU model indicates that the flows exiting concentration point CA07D, (intersection of 115th Avenue and Union Hills Drive), are routed to concentration point CA08 on the west side of the Coyote Lakes development. This illustrates that the flows cross the Coyotes Lakes development which, based on field inspections and aerial topography,

does not appear to actually occur. However, the ADMPU model appeared to correctly show this flow being routed south along 115th Avenue to concentration point CA07B. Therefore, the existing routing named RA07D within the Baseline hydrology model from concentration point CA07D to point CA08 has been replaced with the routing from the ADMPU hydrology model and now conveys flows from point CA07D to point CA07B.

Finally, a portion of the hydrologic model from the ADMPU was needed to complete the Baseline hydrology model. This was completed by adding basins A07B and S30 along with their associated routings, diversions, and other hydrologic features associated with them to the model. These basins were the only basins in the ADMPU not included in the NWU that contributed to concentration point CA07B. The two models were joined at concentration point CS30A, which was the furthest downstream point in the NWU that both models shared.

Pinnacle Peak Storm Drain

After reviewing the "Existing Conditions with CIP" hydrologic model and the construction plans for Pinnacle Peak Road, it was determined that any flows discharged from the Pinnacle Peak Road and Channel improvements ultimately discharge into the Agua Fria River. Therefore, these future improvements were not included in the Baseline hydrology model. However, included within the "Existing Conditions with CIP" hydrologic model were also improvements to Happy Valley Road that consisted of a channel along the north side intercepting flows and conveying them west to the Agua Fria River. More specifically, diversions DA09T and DA09U now divert 100% of the flows intercepted at Happy Valley Road west out of the drainage sub-area of concern. These improvements represent the northern boundary of the Baseline hydrology model.

A comparison of the discharges from the ADMPU, NWU, and the Baseline hydrology models can be seen in Tables 1 and 2.

Table 1: Comparison of Existing Conditions 100 year, 6 hour discharges

Model	Concentration Point 100 year, 6 hour Discharge (cfs)			
	A07F	CA07E	CA07D	CA07B
ADMPU (Entellus, Inc.)	230	1140	1100	1830
ADMPU NWU (Wood, Patel & Assoc.)	180	730	1030	n/a
ADMPU 107th & U.H.D. Baseline (G&M)	180	730	1030	1880

Table 2: Comparison of Existing Conditions 10 year, 6 hour discharges

Model	Concentration Point 10 year, 6 hour Discharge (cfs)			
	A07F	CA07E	CA07D	CA07B
ADMPU (Entellus, Inc.)	90	270	320	710
ADMPU NWU (Wood, Patel & Assoc.)	70	220	320	n/a
ADMPU 107th & U.H.D. Baseline (G&M)	70	220	320	780

d. DCR Hydrology Model

As previously stated, the DCR model utilized the same methodologies as the previous ADMPU and NWU models to calculate the run-off within the watershed area. As part of this study, both the existing conditions 10 year and 100 year, 6 hour hydrology models were prepared. The major alteration made to the baseline model to arrive at the DCR model was further dividing sub-basins A07E, A07F, and A07G in order to better understand the quantity of flows within existing developments and at street intersections that have recorded flooding problems. Based on input from the stakeholders, these basins were divided in order to determine the flows at certain concentration points within the Paradise Resort Travel Trailer Park and Lake Pleasant Mobile Home Estates. The new sub-basin boundaries and physical parameters, such as watercourse length and slope, along with new routing reaches were determined using aerial topography of the area. Land use and soil areas were recalculated for the new basins and input into FCDMC's DDMSW Version 3.5.7 to compute new sub-basin parameters and develop

new runoff hydrographs. Because of the Clark unit hydrograph being used in this model, the basin parameters had to be calculated separately for the 10 and 100 year storms. This is because the time of concentration, Tc, and storage coefficient, R, depend upon the rainfall intensity and hence the storm duration. The drainage area map of the new sub-basin areas can be seen in Plate 3. Tables 3 and 4 show a comparison of the 10 and 100 year, 6 hour flows from the 107th Avenue and Union Hills Drive DCR model, 107th Ave. and Union Hills Drive baseline model, the Glendale/Peoria ADMPU NWU, and the Glendale/Peoria ADMPU. Plate 4 also shows the 100 year, 6 hour discharges associated with each routing reach and combination point within the updated project area.

Table 3: Comparison of Existing Conditions 100 year, 6 hour discharges

Model	Concentration Point 100 year, 6 hour Discharge (cfs)			
	A07F	CA07E	CA07D	CA07B
ADMPU (Entellus, Inc.)	230	1140	1100	1830
ADMPU NWU (Wood, Patel & Assoc.)	180	730	1030	n/a
ADMPU 107th & U.H.D. Baseline (G&M)	180	730	1030	1880
ADMPU 107th & U.H.D. DCR (G&M)	160	760	1050	1920

Table 4: Comparison of Existing Conditions 10 year, 6 hour discharges

Model	Concentration Point 10 year, 6 hour Discharge (cfs)			
	A07F	CA07E	CA07D	CA07B
ADMPU (Entellus, Inc.)	90	270	320	710
ADMPU NWU (Wood, Patel & Assoc.)	70	220	320	n/a
ADMPU 107th & U.H.D. Baseline (G&M)	70	220	320	780
ADMPU 107th & U.H.D. DCR (G&M)	60	220	320	780

e. Modeling Results

The results from the updated Existing Conditions 10 year and 100 year, 6 hour storm for both the Baseline and DCR models appear to be appropriate for the breakout of sub-basins and results in values that are reasonable when compared to the previous ADMPU and NWU hydrologic models. The minor differences in flows are a result of the changes in sub-basin parameters due to being divided into smaller, more detailed areas.

The model output flow values were compared to the areas that were reported to experience flooding or high flows for the purpose of continuity. Specifically these areas were the 107th Avenue and Union Hills Drive intersection, the 111th Avenue and Union Hills Drive intersection, the 115th Avenue and Union Hills Drive Intersection, the 115th Avenue and Bell Road intersection, the Paradise Resort Travel Trailer Park, and the Lake Pleasant Mobile Home Estates development.

The results of the DCR model indicate concentrated flows at all of the areas of concern. A summary of the flows encountered at each of the areas of concern may be viewed on Plate 5.

5. HYDRAULIC ANALYSIS

a. Union Hills Drive Roadside Channel

A preliminary hydraulic analysis was performed on the channel located south of the Union Hills Drive pavement section. The channel is irregular in shape and depth and has limited capacity as it approaches the 111th Avenue intersection.

Utilizing the Corps of Engineer's HEC-RAS program, the channel hydraulic parameters were computed and input into Manning's Equation in order to calculate the channel capacities at two locations along Union Hills Drive. The channel geometry and slope were obtained from the project 1 ft. aerial

topographic map. The carrying capacity of the channel was computed to a depth equal to the edge of pavement of Union Hills Drive. A second computation was made to illustrate the depth of flow in the roadway cross-section should the design event occur. Two typical cross-sections were utilized for the purpose of this evaluation. The first cross-section was located approximately 550 feet west of the 115th intersection and represents a portion of the channel where the carrying capacity is greatest. The second cross-section is located approximately 350 feet east of the 111th Avenue intersection and represents a portion of the channel where the carrying capacity is limited in nature. The results of the analysis indicate that the channel has a capacity of approximately 362 cfs in the well defined portion near 107th Avenue, however as the channel continues to the west it becomes less defined ending with an approximate capacity of 10 cfs near the intersection of the 111th Avenue. The analysis also indicates that a depth of flow in the Union Hills Drive roadway ranges between channel confined at 107th to a depth of +/- 1 inch above the top of curb 111th Avenue during the 100 Year design event. Detailed calculations for the Union Hills Drive channel and roadway capacities may be viewed in Appendix L.

6. SUMMARY AND PHASE 2 RECOMMENDATION

This design concept report was prepared for the Flood Control District of Maricopa County in response to flooding complaints in the area subdivisions and roadways near the 107th Ave. and Union Hills Drive intersection. The purpose of the DCR is to evaluate area and regional flooding hazards and to make recommendations to the FCD if further analysis be performed to identify regional drainage system alternatives.

The DCR modeled the existing conditions 10year – 6 hour and the 100 year – 6 hour storm event for the study area and was prepared in conformance with previously prepared Glendale/Peoria ADMPU and the associated Northwest Region Update. The results of the DCR model show high concentrations of flow at areas that have reported flooding in the past. These areas are 107th Avenue and Union Hills Drive intersection, the 111th Avenue and Union Hills Drive intersection, the 115th Avenue and Union Hills Drive Intersection, the 115th Avenue and Bell Road intersection, the Paradise Resort Travel Trailer Park and the Lake Pleasant Mobile Home Estates development. In addition to the area noted above it was observed that the intersection of the Beardsley Road channel and 115th Avenue is a potential flooding issue and contributes to the existing flooding hazards located to south.

Based on the detailed hydrologic modeling, site investigations, data review and preliminary hydraulic evaluation of the existing drainage facilities, it appears that the flood hazard that exists today is regional in nature and is due to the lack of an organized storm drain system to convey storm water through the existing roadways and developments. Therefore, it is recommended that the Flood Control District of Maricopa County proceed with further analysis in order to identify regional drainage system alternatives for the subject area.

7. REFERENCES

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j. M2 Group, *The Village at Canyon Ridge West, Grading and Drainage, February 2006.*

k. Norman Engineering Group, Inc., *Civil Improvement Plans for QuickTrip #494, August 2002.*

l. Ritoch-Powell & Associates, Inc., *Grading and Drainage Plan for the Pavilions at Coyote Lakes, September 2006*

m. Ritoch-Powell and Associates, Inc, *Drainage Memo for Union Hills Drive, 115th Avenue to +/- 1,080 ft. West of 107th Avenue, September 2009.*

n. United Engineering Group, *Bell Road and 115th Improvement Plans, August 2008.*

o. Wood, Patel & Associates, *Glendale/ Peoria ADMPU Northwest Region Update Hydrologic Study, May 2007*

Figures

Figure 1: Location Map
Figure 2: Annexation Map
Figure 3: Soil Map
Figure 4: Land Use Map

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GOODWIN AND MARSHALL INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
8909 W. Ray Road #15
Chandler, Arizona 85226
(602) 218 - 7285

LOCATION MAP

CONTRACT: FCD 2009C036
CITY OF PEORIA, MARICOPA COUNTY, ARIZONA

Scale:	1 = 12,000
Date:	MAY 2010
Job No.:	10388A
Drafted:	CRH
Checked:	DMG

FIGURE 1

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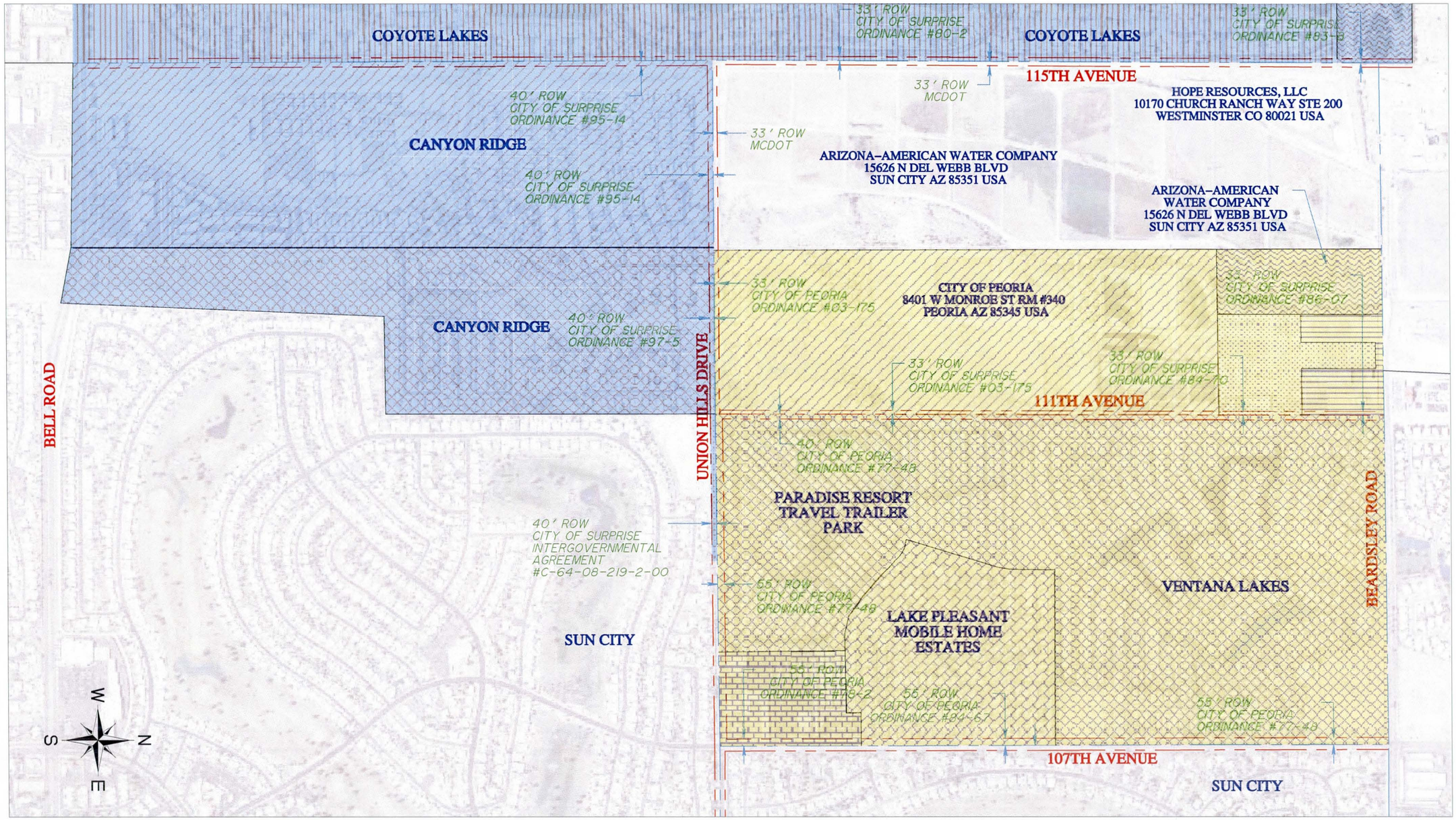

NOTES:

1. ANY AREA NOT SHOWN TO BE UNDER THE JURISDICTION OF THE CITY OF PEORIA OR THE CITY OF SURPRISE FALLS UNDER THE JURISDICTION OF MARICOPA COUNTY.

LEGEND

- RIGHT OF WAY
- SECTION LINE
- CITY OF PEORIA JURISDICTION
- CITY OF SURPRISE JURISDICTION

SURPRISE
ARIZONA

CITY OF PEORIA

Flood Control District of Maricopa County

ENGINEER/PLANNER:
GOODWIN AND MARSHALL INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

FIGURE 2
ANNEXATION MAP
for
107TH AVENUE AND UNION HILLS DRIVE
CONTRACT: FCD2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
JULY, 2010

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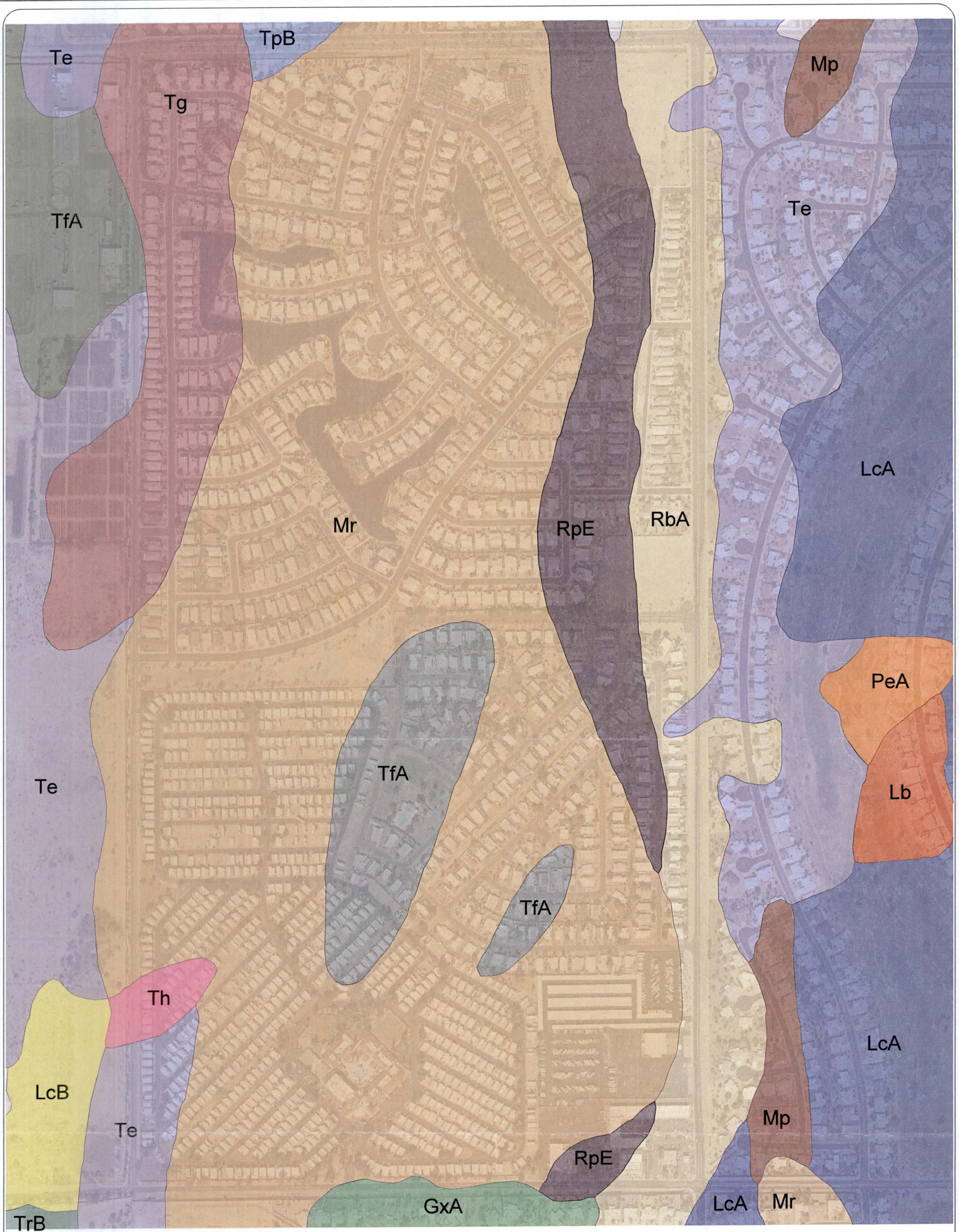

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LEGEND

- GxA – Gunsight-Rillito complex
- LcA – Laveen loam, 0 to 1 percent slopes
- Mp – Mohall loam
- PeA – Perryville gravelly loam, 0 to 1 percent slopes
- RpE – Rillito-Perryville complex, 5 to 20 percent slopes
- TfA – Tremant gravelly loam, 0 to 1 percent slopes
- Th – Tremant gravelly clay loam
- TPB – Tremant complex, 0 to 3 percent slopes
- TrB – Tremant-Rillito complex, 1 to 3 percent slopes
- Lb – Laveen sandy loam
- LcB – Laveen loam, 1 to 3 percent slopes
- Mr – Mohall clay loam
- RbA – Rillito loam, 0 to 1 percent slopes
- Te – Tremant loam
- Tg – Tremant clay loam

SURPRISE
ARIZONA

CITY OF PEORIA

Flood Control District of Maricopa County

ENGINEER/PLANNER:

GOODWIN AND MARSHALL INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

FIGURE 3
SOILS MAP
FOR
107TH AVENUE AND
UNION HILLS DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
MAY, 2010

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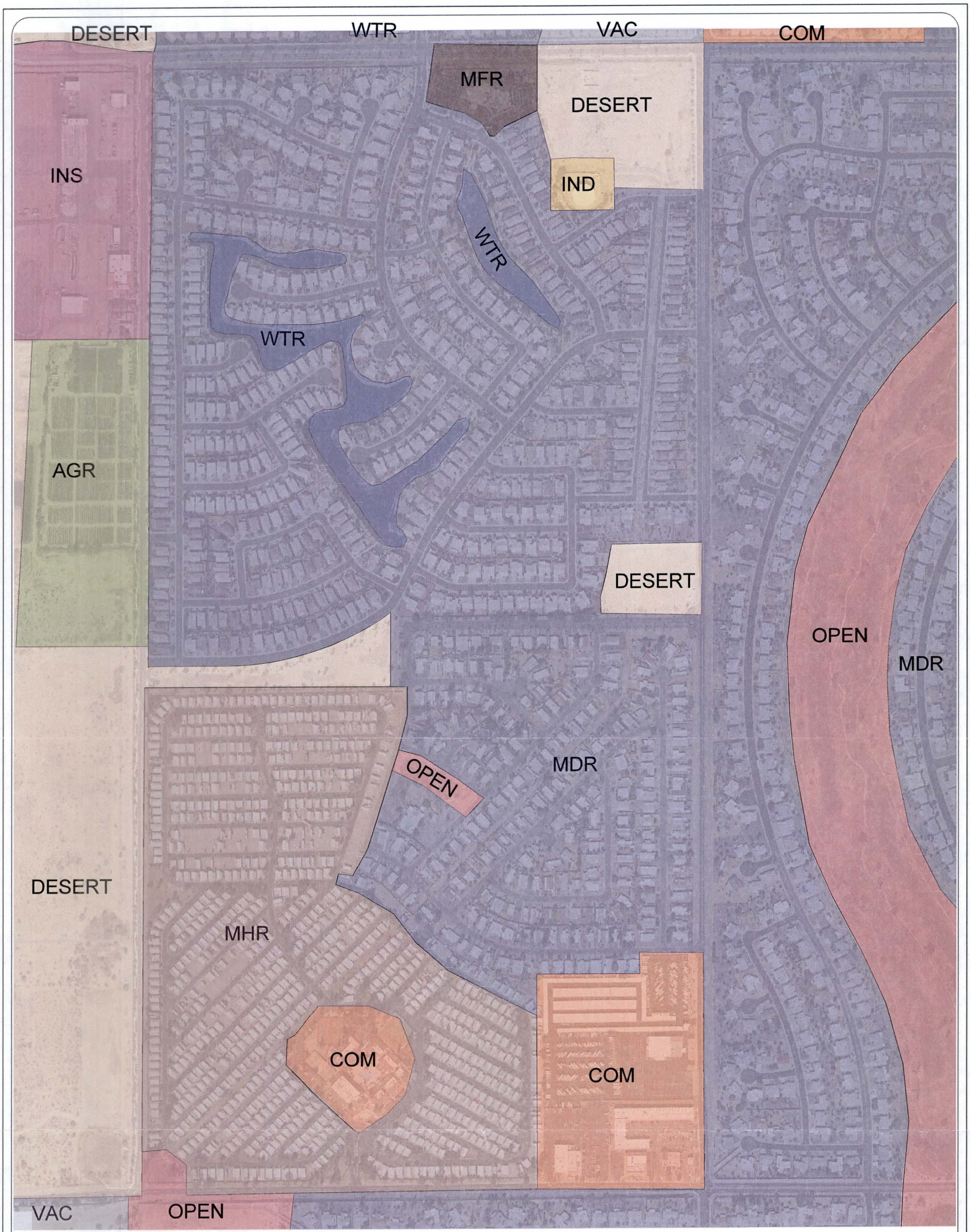

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LEGEND

- INS - INSTITUTIONAL
- MDR - MEDIUM DENSITY RESIDENTIAL
- Desert - Desert
- IND - Industrial
- COM - Community Retail Center
- VAC - Vacant
- WTR - Water
- OPEN - Recreational Open Space
- AGR - Agriculture
- MHR - Mobile Housing Residential
- MFR - Multi -Family Residential

SURPRISE
ARIZONA

CITY OF PEORIA

Flood Control District of Maricopa County

ENGINEER/PLANNER:

GOODWIN AND MARSHALL INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

FIGURE 4
LAND USE MAP
FOR
107TH AVENUE AND
UNION HILLS DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
MAY, 2010

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Appendix A

Data Collection Memo and
Documented Flooding Complaints

MEMORANDUM

DATA COLLECTION
107th Avenue and Union Hills Drive
Design Concept Report
Phase 1 – Analysis and Recommendations

The purpose of this memorandum is to summarize the data collection efforts relative to the above referenced project.

a. Flood Control District of Maricopa County

i. Glendale/Peoria ADMP Update

ii. Glendale/Peoria ADMPU Northwest Region Update

iii. Pinnacle Peak Road Hydrology (Wood Patel, 2010)

iv. GIS Data

b. City of Peoria

- 111th Avenue Roadway Improvement plans
- Bay Pointe at Ventana Lakes G&D plans
- Bay Pointe Unit 2 at Ventana Lakes G&D plans
- Greystone Heritage at Ventana Lakes G&D plans
- Greystone Heritage Unit 2 at Ventana Lakes G&D plans
- Moonlight Bay at Ventana Lakes Phase 1&2 G&D plans
- South Bay at Ventana Lakes G&D plans
- South Bay Unit 2 at Ventana Lakes G&D plans
- The Landings at Ventana Lakes G&D plans
- Beardsley Road Improvement plans – 91st Ave. to 83rd Ave.
- Beardsley Road West Paving plans
- Beardsley Road East Paving plans
- Sun City Masonic Fellowship Center - Lodge #72 site plan
- Sun City Masonic Fellowship Center - Lodge #72 addition site plan
- Sun City Service Center for the Salvation Army
- Sun City RV and Mini Storage site plan
- Flood Complaint Summary

c. City of Surprise

- Bell Road Improvement Plans – Grand Avenue to 115th Avenue
- Improvement Plans for 114th Avenue – 115th Avenue to Bell Road
- Improvement Plans for Bell Road and 115th Avenue
- Canyon Ridge West Infrastructure Mass Grading plans
- The Village at Canyon Ridge West G&D plans
- The Village at Canyon Ridge West Paving Plans
- Coyote Lakes Paving Plans
- Canyon Ridge West Infrastructure Paving and Storm Drain plans
- Canyon Ridge West Parcel 5 G&D plans
- Canyon Ridge Master Drainage Report

d. Miscellaneous Data

- Canyon Ridge Parcel 5 Final Plat
- Canyon Ridge Parcel 6 Final Plat
- Lake Pleasant Mobile Home Estates Two Final Plat
- Paradise Resort Travel Trailer Park Final Plat
- Sun City Unit Forty-Five Final Plat
- Sun City Unit Forty-Seven Final Plat
- MCDOT City of Peoria and City Surprise ROW maps
- City of Peoria Study Area Annexation Ordinances
- City of Surprise Study Area Annexation Ordinances

City of Peoria - Documented Flooding Complaints

DRAINAGE COMPLAINTS FOR THE AREA

Paradise RV Park: The community has on several occasions been concern with local flooding. They have maintenance facilities and recreational facilities inundated by certain flow events. This Community has small storm water retention facilities, per an outdated standard. Off-site flows enter thru turned block wall openings along the east side of the development, and thru wall openings along the northeast boundary. No particular damage claims have been made. They do not have an "Action or Response Plan" that might help in averting much of the concerns.

WWTP Basin: Basin is designed to contain the impact of the roadway and pavement along 111th Av. adjacent to the WWTP. The Basin fills prematurely since flow also enters from UHD. Basin does not discharge within prescribed timeframe.

107th Av.: Reports of flow crossing the roadway causing a nuisance and safety concern for motorists. Silt and debris hazard and related maintenance associated with the flow crossing the roadway. Flooded intersection at UHD.

Union Hills Drive (UHD): Reports of flow crossing into the roadway causing a nuisance and safety concern for motorists. Silt and debris hazard and related maintenance associated with the flow crossing the roadway.

DRAINAGE CONCERNS IN THE AREA

Lake Pleasant Mobile Home Estates: This community has no storm water retention at all. The Community is responsible to maintain wall openings on the discharge end of the drainage system, which maintenance is not consistent. Off-site flows enter at Sack Drive and thru a drainage way at Dinero Road and Carnation Drive.

Sun City Storage: This development has no storm water retention at all.

Sun City Lodge: The development has no retention at all. Debris from Sun City and 107th Av. roadway litters parking lot.

107 Union Hills LLC: The development has no storm water retention at all.

Circle K: The Development has no storm water retention at all

Salvation Army: The development has no storm water retention at all.

Sun City Elks Lodge: The development has no storm water retention at all.

Un-metered outlet and surface flows over the roadway along east side of 107th Av. from UHD to Palm Tree Dr. Including the UHD, 107th intersection.

Maintenance of wall openings throughout Section 30; T3N, R1E, SE $\frac{1}{4}$ section.

Loss of conveyance cross section along the south side of UHD from 107th Av. westerly to 111th Av.

Lack of off-site flows reaching the Canyon Ridge West Development.

Lack of retention volume for developments throughout The SE $\frac{1}{4}$ section, Section 30; T3N, R1E.

Unintended inundation of the WWTP Basin.

Lack of outlet or discharge for the WWTP Basin.

Missing roadway improvements for UHD from 107th to 111th Av. and 107th Av. from UHD to Palm Tree Dr. (i.e. curb, gutter, storm drains, catch basin.)

City of Surprise - Documented Flooding Complaints, January 2010 Storm

SURPRISE
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Appendix B

DDMSW Rainfall Data

Flood Control District of Maricopa County
Drainage Design Management System
RAINFALL DATA
Project Reference: FCD2009C036

Rainfall Method: NOAA

Duration	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
5 MIN	0.330	0.420	0.490	0.580	0.660	0.730
10 MIN	0.490	0.640	0.740	0.890	1.000	1.120
15 MIN	0.590	0.800	0.940	1.130	1.280	1.430
30 MIN	0.790	1.070	1.260	1.530	1.740	1.940
1 HOUR	0.960	1.320	1.570	1.900	2.170	2.430
2 HOUR	1.040	1.450	1.730	2.100	2.400	2.690
3 HOUR	1.100	1.540	1.830	2.240	2.550	2.870
6 HOUR	1.200	1.700	2.030	2.490	2.850	3.200
12 HOUR	1.300	1.880	2.260	2.790	3.200	3.600
24 HOUR	1.400	2.060	2.490	3.090	3.540	4.000

Appendix C

DDMSW Sub-Basin Parameters

Area ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period Parameters: 2 Yr	5 Yr	10 Yr	25 Yr	50 Yr	100 Yr
Major Basin ID: 01																		
A07G.1	0.233	0.84	35.7	35.7	URBAN	0.048	0.24	0.15	8.00	0.10	33	**Tc (Hrs)**	0.690	0.679	0.619	0.560	0.527	0.501
												Vel (f/s)	1.79	1.81	1.99	2.20	2.34	2.46
												R (Hrs)	0.489	0.480	0.433	0.388	0.363	0.343
A07G.2	0.028	0.57	28.2	28.2	URBAN	0.063	0.27	0.27	4.70	0.35	24	**Tc (Hrs)**	0.811	0.796	0.718	0.640	0.591	0.553
												Vel (f/s)	1.03	1.05	1.16	1.31	1.41	1.51
												R (Hrs)	1.436	1.406	1.254	1.104	1.011	0.939
A07E.1	0.037	0.38	23.7	23.7	URBAN	0.061	0.25	0.15	8.00	0.10	60	**Tc (Hrs)**	0.570	0.562	0.518	0.474	0.448	0.427
												Vel (f/s)	0.98	0.99	1.08	1.18	1.24	1.31
												R (Hrs)	0.599	0.590	0.539	0.488	0.458	0.434
A07E.2	0.025	0.31	55.7	55.7	URBAN	0.061	0.24	0.26	5.40	0.26	29	**Tc (Hrs)**	0.454	0.447	0.405	0.362	0.335	0.316
												Vel (f/s)	1.00	1.02	1.12	1.26	1.36	1.44
												R (Hrs)	0.495	0.486	0.436	0.384	0.353	0.330
A07E.3	0.062	0.35	54.3	54.3	URBAN	0.057	0.25	0.19	6.60	0.17	31	**Tc (Hrs)**	0.450	0.442	0.400	0.358	0.335	0.317
												Vel (f/s)	1.14	1.16	1.28	1.43	1.53	1.62
												R (Hrs)	0.321	0.315	0.282	0.249	0.231	0.218
A07E.4	0.057	0.36	25.1	25.1	URBAN	0.054	0.23	0.16	8.00	0.10	57	**Tc (Hrs)**	0.514	0.507	0.467	0.427	0.403	0.384
												Vel (f/s)	1.03	1.04	1.13	1.24	1.31	1.38
												R (Hrs)	0.400	0.394	0.359	0.325	0.305	0.289
A07E.5	0.035	0.29	37.4	37.4	URBAN	0.058	0.23	0.15	8.40	0.09	57	**Tc (Hrs)**	0.421	0.415	0.383	0.350	0.331	0.315
												Vel (f/s)	1.01	1.02	1.11	1.22	1.28	1.35
												R (Hrs)	0.356	0.350	0.320	0.290	0.272	0.258
A07E.6	0.020	0.17	70.6	70.6	URBAN	0.037	0.12	0.15	7.60	0.13	74	**Tc (Hrs)**	0.205*	0.202*	0.188*	0.172*	0.163*	0.156*
												Vel (f/s)	1.22	1.23	1.33	1.45	1.53	1.60
												R (Hrs)	0.143	0.141	0.130	0.118	0.111	0.106
A07E.7	0.006	0.10	94.7	94.7	URBAN	0.046	0.14	0.25	5.80	0.26	67	**Tc (Hrs)**	0.167*	0.165*	0.153*	0.139*	0.131*	0.125*
												Vel (f/s)	0.88	0.89	0.96	1.06	1.12	1.17
												R (Hrs)	0.149	0.147	0.134	0.121	0.114	0.108

* Non default value or value out of range

Area ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period Parameters: 2 Yr	5 Yr	10 Yr	25 Yr	50 Yr	100 Yr
Major Basin ID: 01																		
A07E.8	0.006	0.13	52.6	52.6	URBAN	0.047	0.14	0.25	4.80	0.40	66	**Tc (Hrs)**	0.234*	0.231*	0.214*	0.195*	0.184*	0.175*
												Vel (f/s)	0.81	0.83	0.89	0.98	1.04	1.09
												R (Hrs)	0.267	0.263	0.241	0.218	0.204	0.193
A07F.1	0.133	1.16	17.2	17.2	HEC1 DEFAULT	0.053	0.25	0.25	4.80	0.35	30	**Tc (Hrs)**	1.193*	1.173*	1.064*	0.953*	0.883	0.829
												Vel (f/s)	1.43	1.45	1.60	1.79	1.93	2.05
												R (Hrs)	1.601	1.571	1.410	1.247	1.146	1.069
A07F.2	0.074	0.90	18.9	18.9	HEC1 DEFAULT	0.037	0.14	0.32	4.70	0.29	8	**Tc (Hrs)**	0.914	0.897	0.800	0.702	0.644	0.602
												Vel (f/s)	1.44	1.47	1.65	1.88	2.05	2.19
												R (Hrs)	1.358	1.329	1.170	1.012	0.920	0.853

* Non default value or value out of range

Appendix D

DDMSW Soil Data

Flood Control District of Maricopa County
Drainage Design Management System
SOILS
Project Reference: FCD2009C036

6/2/2010

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
A07E.1	651	Mr	6514455	0.032	86.40	0.05	-	100
	651	TfA	651583120	0.005	13.60	0.37	-	100
A07E.2	651	Mr	6514455	0.008	33.50	0.05	-	100
	651	TfA	651583120	0.016	62.90	0.37	-	100
	651	RpE	651545128	0.001	3.60	0.29	-	100
A07E.3	651	Mr	6514455	0.032	51.80	0.05	-	100
	651	TfA	651583120	0.005	8.40	0.37	-	100
	651	RpE	651545128	0.008	13.30	0.29	-	100
	651	RbA	651542320	0.015	23.90	0.26	-	100
	651	Te	6515829	0.002	2.60	0.25	-	100
A07E.4	651	Mr	6514455	0.045	76.50	0.05	-	100
	651	Th	6515835	0.003	5.30	0.04	-	100
	651	Te	6515829	0.006	9.60	0.25	-	100
	651	TfA	651583120	0.005	8.60	0.37	-	100
A07E.5	651	Mr	6514455	0.030	85.30	0.05	-	100
	651	GxA	651326720	0.005	14.40	0.23	-	100
	651	TfA	651583120	0.000	0.30	0.37	-	100
A07E.6	651	Mr	6514455	0.015	76.00	0.05	-	100
	651	RpE	651545128	0.000	0.50	0.29	-	100
	651	RbA	651542320	0.005	23.50	0.26	-	100
A07E.7	651	Mr	6514455	0.002	32.90	0.05	-	100
	651	RpE	651545128	0.003	45.70	0.29	-	100
	651	RbA	651542320	0.001	12.90	0.26	-	100
	651	GxA	651326720	0.001	8.60	0.23	-	100
A07E.8	651	RbA	651542320	0.005	84.40	0.26	-	100
	651	RpE	651545128	0.001	10.90	0.29	-	100
	651	Mr	6514455	0.000	3.10	0.05	-	100
	651	LcA	651422520	0.000	1.60	0.25	-	100
A07F.1	651	Te	6515829	0.054	40.80	0.25	-	100
	651	LcA	651422520	0.054	40.90	0.25	-	100
	651	Mp	6514451	0.012	8.70	0.25	-	100
	651	RbA	651542320	0.012	8.90	0.26	-	100
	651	Mr	6514455	0.001	0.80	0.05	-	100
A07F.2	651	LcA	651422520	0.049	66.40	0.25	-	100
	651	Te	6515829	0.016	21.10	0.25	-	100
	651	PeA	651502920	0.005	6.10	0.37	-	100
	651	Lb	6514223	0.004	5.40	0.40	-	100
	651	RbA	651542320	0.001	0.90	0.26	-	100
A07G.1	651	Mr	6514455	0.161	69.20	0.05	-	100
	651	TfA	651583120	0.001	0.50	0.37	-	100
	651	RpE	651545128	0.032	13.70	0.29	-	100
	651	RbA	651542320	0.006	2.40	0.26	-	100
	651	Tg	6515833	0.033	13.90	0.04	-	100

* Non default value

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
A07G.1	651	Te	6515829	0.000	0.20	0.25	-	100
	651	TPB	651585022	0.000	0.10	0.12	-	100
A07G.2	651	RbA	651542320	0.025	89.60	0.26	-	100
	651	RpE	651545128	0.000	1.10	0.29	-	100
	651	Te	6515829	0.003	9.30	0.25	-	100

Appendix E

DDMSW Land Use Data

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kb
Major Basin ID: 01								
A07E.1	MDR	0.000	0.3	0.25000	30	50.0	NORMAL	.10000
	MHR	0.037	99.7	0.25000	60	50.0	NORMAL	.06000
		0.037	**100.0**					
A07E.2	MDR	0.022	88.3	0.25000	30	50.0	NORMAL	.06000
	MHR	0.001	4.4	0.25000	60	50.0	NORMAL	.08000
	OPEN	0.002	7.3	0.10000	0	10.0	DRY	.04000
		0.025	**100.0**					
A07E.3	COMM	0.001	1.9	0.10000	80	75.0	NORMAL	.04000
	MDR	0.061	98.1	0.25000	30	50.0	NORMAL	.06000
		0.062	**100.0**					
A07E.4	COMM	0.006	10.1	0.10000	80	75.0	NORMAL	.04000
	MDR	0.002	2.6	0.25000	30	50.0	NORMAL	.08000
	MHR	0.047	80.9	0.25000	60	50.0	NORMAL	.06000
	OPEN	0.004	6.4	0.10000	0	10.0	DRY	.04000
		0.058	**100.0**					
A07E.5	COMM	0.004	11.3	0.10000	80	75.0	NORMAL	.04000
	MDR	0.006	17.1	0.25000	30	50.0	NORMAL	.07000
	MHR	0.025	71.7	0.25000	60	50.0	NORMAL	.06000
		0.035	**100.1**					
A07E.6	COMM	0.018	88.4	0.10000	80	75.0	NORMAL	.03000
	MDR	0.002	11.6	0.25000	30	50.0	NORMAL	.08000
		0.020	**100.0**					
A07E.7	COMM	0.005	73.9	0.10000	80	75.0	NORMAL	.04000
	MDR	0.002	26.1	0.25000	30	50.0	NORMAL	.08000
		0.007	**100.0**					
A07E.8	COMM	0.004	71.0	0.10000	80	75.0	NORMAL	.04000
	MDR	0.002	29.0	0.25000	30	50.0	NORMAL	.08000
		0.006	**100.0**					
A07F.1	MDR	0.133	100.0	0.25000	30	50.0	NORMAL	.05000
		0.133	**100.0**					
A07F.2	MDR	0.020	26.8	0.25000	30	50.0	NORMAL	.06000
	OPEN	0.054	73.2	0.10000	0	10.0	DRY	.03000

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kb
Major Basin ID: 01								
		0.074	**100.0**					
A07G.1	DESERT	0.019	8.0	0.35000	0	25.0	DRY	.07000
	IND	0.003	1.1	0.15000	55	60.0	NORMAL	.04000
	INS	0.001	0.3	0.10000	75	85.0	NORMAL	.04000
	MDR	0.192	82.4	0.25000	30	50.0	NORMAL	.05000
	MFR	0.004	1.5	0.25000	45	50.0	NORMAL	.08000
	WATER	0.015	6.5	0.00000	100	0.0	WET	.03000
		0.232	**99.8**					
A07G.2	DESERT	0.005	19.3	0.35000	0	25.0	DRY	.07000
	MDR	0.023	80.7	0.25000	30	50.0	NORMAL	.06000
		0.028	**100.0**					

* Non default value

Appendix F

HEC-1 Detention / Retention Calculations

RETENTION CALCULATIONS SUMMARY

107th Avenue and Union Hills Drive Design Concept Report – FCD2009C036

Sub-Basin	Calculated Retention Volume (ac.ft.)	80% Effective Volume (ac.ft.)
A07E.2	0.055	0.044
A07E.3	0.121	0.096
A07E.4	0.815	0.652
A07E (Corner of U.H.D. & 111th Ave.)	3.47	2.77

A07E1

SURFACE TO SURFACE VOLUME REPORT

Goodwin & Marshall, Inc.
2405 Mustang Dr.
Grapevine, TX 76051
817-329-4373

Project: W:\10388A\Hydr\Hydrology Base.pro
Report Generated: Thursday, June 03, 2010 11:14:11 AM

Where the second surface is above the first the volume is reported as fill.
Where the second surface is below the first the volume is reported as excavation.

Shrinkage/swell factors: Excavation 1.0000 Fill 1.0000

First Surface Layer Name	Number of Points	Second Surface Layer Name	Number of Points
TEMP CRH	9,066	TEMP	81

Volume limited to that within the constraining boundary - Object 70784
Area within boundary: 38,827.44 Sq. Ft. (0.8914 Acres)
Total triangulated area: 36,491.28 Sq. Ft. (0.8377 Acres)

Excavation Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)
0.0	2,939.3

Net Difference: 2,939.3 Cu. Yd. Borrow

A07E2

SURFACE TO SURFACE VOLUME REPORT

Goodwin & Marshall, Inc.
2405 Mustang Dr.
Grapevine, TX 76051
817-329-4373

Project: W:\10388A\Hydr\Hydrology Base.pro
Report Generated: Thursday, June 03, 2010 11:38:28 AM

Where the second surface is above the first the volume is reported as fill.
Where the second surface is below the first the volume is reported as excavation.

Shrinkage/swell factors: Excavation 1.0000 Fill 1.0000

First Surface Layer Name	Number of Points	Second Surface Layer Name	Number of Points
TEMP CRH	8,734	TEMP	76

Volume limited to that within the constraining boundary - Object 68485
Area within boundary: 5,970.68 Sq. Ft. (0.1371 Acres)
Total triangulated area: 3,771.29 Sq. Ft. (0.0866 Acres)

Excavation Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)
0.9	90.5

Net Difference: 89.6 Cu. Yd. Borrow

A07E3

SURFACE TO SURFACE VOLUME REPORT

Goodwin & Marshall, Inc.
2405 Mustang Dr.
Grapevine, TX 76051
817-329-4373

Project: W:\10388A\Hydr\Hydrology Base.pro
Report Generated: Thursday, June 03, 2010 11:02:26 AM

Where the second surface is above the first the volume is reported as fill.
Where the second surface is below the first the volume is reported as excavation.

Shrinkage/swell factors: Excavation 1.0000 Fill 1.0000

First Surface Layer Name	Number of Points	Second Surface Layer Name	Number of Points
TEMP CRH	9,066	TEMP	81

Volume limited to that within the constraining boundary - Object 68244
Area within boundary: 4,508.77 Sq. Ft. (0.1035 Acres)
Total triangulated area: 4,385.28 Sq. Ft. (0.1007 Acres)

Excavation Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)
0.1	194.9

Net Difference: 194.8 Cu. Yd. Borrow

A07E4

SURFACE TO SURFACE VOLUME REPORT

Goodwin & Marshall, Inc.
2405 Mustang Dr.
Grapevine, TX 76051
817-329-4373

Project: W:\10388A\Hydr\Hydrology Base.pro
Report Generated: Thursday, June 03, 2010 11:19:25 AM

Where the second surface is above the first the volume is reported as fill.
Where the second surface is below the first the volume is reported as excavation.

Shrinkage/swell factors: Excavation 1.0000 Fill 1.0000

First Surface Layer Name	Number of Points	Second Surface Layer Name	Number of Points
TEMP CRH	9,071	TEMP	80

Volume limited to that within the constraining boundary - Object 71920
Area within boundary: 17,447.75 Sq. Ft. (0.4005 Acres)
Total triangulated area: 14,941.59 Sq. Ft. (0.3430 Acres)

Excavation Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)
0.0	1,314.0

Net Difference: 1,314.0 Cu. Yd. Borrow

A07E

SURFACE TO SURFACE VOLUME REPORT

Goodwin & Marshall, Inc.
2405 Mustang Dr.
Grapevine, TX 76051
817-329-4373

Project: W:\10388A\Hydr\Hydrology Base.pro
Report Generated: Thursday, June 03, 2010 11:25:03 AM

Where the second surface is above the first the volume is reported as fill.
Where the second surface is below the first the volume is reported as excavation.

Shrinkage/swell factors: Excavation 1.0000 Fill 1.0000

First Surface Layer Name	Number of Points	Second Surface Layer Name	Number of Points
TEMP CRH	9,071	TEMP	80

Volume limited to that within the constraining boundary - Object 71929
Area within boundary: 67,928.11 Sq. Ft. (1.5594 Acres)
Total triangulated area: 60,665.36 Sq. Ft. (1.3927 Acres)

Excavation Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)
0.0	5,602.8

Net Difference: 5,602.8 Cu. Yd. Borrow

Appendix G

Baseline Existing Conditions 10 Year-
6 Hour HEC-1 Output

```
1****************************************
****************************************
 *                                      *                                                    *
   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS
   *
 *              JUN   1998              *                                                    *    HYDROLOGIC ENGINEERING
CENTER    *
 *            VERSION 4.1               *                                                    *         609 SECOND STREET
   *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616
   *
 *  RUN DATE   02JUN10  TIME  13:42:16  *                                                    *           (916) 756-1104
   *
 *                                      *                                                    *
   *
 ****************************************
****************************************
```

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

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

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

```
1                                                HEC-1 INPUT                                                          PAGE  1

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

    1           ID   Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 10 Years
    2           ID                                                                                **
    3           ID   107th Avenue and Union Hills Drive Design Concept Report                     **
    4           ID                                                                              **

    5           ID   PROJECT NO.: FCD 2009C036                        G&M: 10388A                    **

    6           ID                                                                              **

    7           ID   Original HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                 **
    8           ID                          10-Year 6-Hour HEC-1 Model for Existing Conditions  **
    9           ID   Modified HEC-1 Model: BASE10-6.DAT, Goodwin & Marshall, Inc., May29, 2010 **
   10           ID                          10-Year 6-Hour HEC-1 Model for Existing Conditions  **
   11           ID                                                                              **

   12           ID   1) NOAA2 Rainfall Data                                                      **
```



```
   13           ID   2) DDMSW V3.5.7 Used                                                        **

   14           ID                                                                              **

   15           ID   ***********************************************************************
   16           ID   Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 10 Years
   17           ID                                                                                **
   18           ID   Glendale/Peoria ADMPU Northwest Region Update                                **
   19           ID   Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                **
   20           ID                          REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS            **
   21           ID   Modified HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                 **
   22           ID                          10-Year 6-Hour HEC-1 Model for Existing Conditions  **
   23           ID   1) NOAA 2 Rainfall Data                                                      **
   24           ID   2) DDMSW MCUHP1 V3.3.2 Used                                                  **
   25           ID                                                                                **
   26           ID   ***********************************************************************
                *
   27           ID   ***********************************************************************
   28           ID   **                                                                           **
   29           ID   ** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS      **
   30           ID   ** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                 **
   31           ID   ** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005            **
   32           ID   ** THIS IS THE PREFERRED ALTERNATIVE MODEL                                   **
   33           ID   ** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS             **
   34           ID   ** USING LATEST SURVEY DATA.                                                 **
   35           ID   ***********************************************************************
                *
   36           ID   ***********************************************************************
   37           ID   **                                                                           **
   38           ID   **                    Glendale/Peoria ADMP Update                            **
   39           ID   **                                                                           **
   40           ID   ***********************************************************************
   41           ID   ***********************************************************************
   42           ID   PROJECT:                Glendale Peoria ADMP Update
   43           ID   CLIENT:                 Flood Control District of Maricopa County
   44           ID   PREPARED BY:            Entellus, Inc.
   45           ID   PROJECT No:             FCD 99-44                Entellus 310.017
   46           ID   FILE NAME: LEVEL3.DAT                 CREATED DATE: JUNE 6, 2001
   47           ID   STORM:                  100-year 6-hour Storm
   48           ID   DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY
   49           ID
                *
                * ***********************************************************************
   50           IT       2                    1000
   51           IO       5
1                                                HEC-1 INPUT                                                          PAGE  2

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

   52           IN      15
                *
                *DIAGRAM
                *
   53           JD    2.03    0.01
   54           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
   55           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
   56           PC   0.962   0.972   0.983   0.991   1.000
   57           JD   2.017    0.50
   58           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
   59           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
   60           PC   0.962   0.972   0.983   0.991   1.000
   61           JD   1.979    2.80
   62           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
   63           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
```

```
 64   PC   0.950   0.963   0.975   0.988   1.000
 65   JD   1.872    16.0
 66   PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 67   PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 68   PC   0.946   0.960   0.973   0.987   1.000
 69   JD   1.648    90.0
 70   PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 71   PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 72   PC   0.927   0.945   0.964   0.982   1.000
      *
      * ******************************************************************************
      *
      * The Following Portion Came from the HEC-1 Model for the Tierra Del Rio
      * Development.  Model CREATED BY A. MERCIER, CMX, ON 01/16/04
      * FILE NAME: TDR6DC.DAT
      *
      * ******************************************************************************
      *

 73   KK     CBA   BASIN
 74   KM   SUB-BASIN CBA
 75   BA   0.007
 76   LG    0.34    0.35    6.80    0.13      11
 77   UC   0.241   0.298
 78   UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 79   UA     100
      *

 80   KK    RCBA
 81   KM   CHANNEL ROUTING
 82   RD    1479   .0095    .030            TRAP       0       4
      *

 83   KK     P28   BASIN
 84   KM   SUB-BASIN P28
 85   BA   0.027
 86   LG    0.25    0.13   10.10    0.04      29
 87   UC   0.417   0.419
 88   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 89   UA     100
      *
```



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

 90   KK    CP28
 91   KM
 92   HC       2
      *

 93   KK    DT28
 94   KM
 95   DT    DB28   1.230
 96   DI       0     100     500    1000    5000
 97   DQ       0     100     500    1000    5000
      *

 98   KK     CBB   BASIN
 99   KM   SUB-BASIN CBB
100   BA   0.017
101   LG    0.34    0.34    4.55    0.35      15
102   UC   0.258   0.213
103   UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
104   UA     100
      *

105   KK    RCBB
106   KM   CHANNEL ROUTING
107   RD    1231   .0244    .030            TRAP       0       4
      *

108   KK   CP28a
109   KM
110   HC       2
      *

111   KK    R28a
112   KM   CHANNEL ROUTING
113   RD    1642   .0018    .030            TRAP      10       4
      *

114   KK     P27   BASIN
115   KM   SUB-BASIN P27
116   BA   0.065
117   LG    0.25    0.15    8.00    0.10      30
118   UC   0.526   0.565
119   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
120   UA     100
      *

121   KK    DT27
122   KM
123   DT    DB27   1.360
124   DI       0     100     500    1000    5000
125   DQ       0     100     500    1000    5000
      *
```



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

126   KK    CP27
127   KM
128   HC       2
      *

129   KK    P27A   BASIN
130   KM   SUB-BASIN P27A
131   BA   0.008
132   LG    0.25    0.25    4.35    0.46      44
133   UC   0.294   0.378
134   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
135   UA     100
      *

136   KK   DT27a
137   KM
138   DT   DB27a   0.210
139   DI       0     100     500    1000    5000
140   DQ       0     100     500    1000    5000
      *

141   KK    P27B   BASIN
142   KM   SUB-BASIN P27B
143   BA   0.013
144   LG    0.26    0.26    5.00    0.32      37
145   UC   0.329   0.449
```

```
146          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
147          UA     100
             *

148          KK   DT27b
149          KM
150          DT   DB27b   0.250
151          DI       0     100     500    1000    5000
152          DQ       0     100     500    1000    5000
             *

153          KK     CBL   BASIN
154          KM  SUB-BASIN CBL
155          BA   0.028
156          LG    0.28    0.29    5.70    0.23      24
157          UC   0.358   0.401
158          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
159          UA     100
             *

160          KK    CCBL
161          KM
162          HC       4
             *
```



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

163          KK    RCBL
164          KM  NATURAL WASH ROUTING
165          RC   0.035   0.035   0.035     840   .0227
166          RX       0     7.5      15      50      60      95   102.5     110
167          RY       5     2.5       0       0       0       0     2.5       5
             *

168          KK     CBK   BASIN
169          KM  SUB-BASIN CBK
170          BA   0.052
171          LG    0.34    0.34    4.65    0.33       6
172          UC   0.374   0.290
173          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
174          UA     100
             *

175          KK    CCBK
176          KM
177          HC       2
             *

178          KK    RCBK
179          KM  CHANNEL ROUTING
180          RD     755   .0238    .030            TRAP      10       4
             *

181          KK     P14   BASIN
182          KM  SUB-BASIN P14
183          BA   0.008
184          LG    0.34    0.34    3.81    0.53       2
185          UC   0.323   0.262
186          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
187          UA     100
             *
```



```
188          KK    RT14
189          KM
190          DT    RB14   1.130
191          DI       0     100     500    1000    5000
192          DQ       0     100     500    1000    5000
             *

193          KK    CP14
194          KM
195          HC       2
             *

196          KK     P15   BASIN
197          KM  SUB-BASIN P15
198          BA   0.006
199          LG    0.33    0.34    3.23    0.81       5
200          UC   0.617   0.829
201          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
202          UA     100
             *
```



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

203          KK    DT15
204          KM
205          DT    DB15   0.260
206          DI       0     100     500    1000    5000
207          DQ       0     100     500    1000    5000
             *

208          KK     CBJ   BASIN
209          KM  SUB-BASIN CBJ
210          BA   0.015
211          LG    0.35    0.35    4.30    0.41      10
212          UC   0.303   0.333
213          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
214          UA     100
             *

215          KK    CP15
216          KM
217          HC       3
             *

218          KK     R15
219          KM  CHANNEL ROUTING
220          RD     800   .0125    .030            TRAP      10       4
             *

221          KK     CBH   BASIN
222          KM  SUB-BASIN CBH
223          BA   0.012
224          LG    0.35    0.35    4.40    0.38      15
225          UC   0.205   0.136
226          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
227          UA     100
             *
             * Route CBH to P25S
             *

228          KK    RCBH
229          RS       2    FLOW       0
```

```
 230          RC    0.02     .02     .02    1500   .0055
 231          RX     280     320     340     350     360     370     390     430
 232          RY       6       4       2       0       0       2       4       6
              *

 233          KK    P25S   BASIN
 234          KM  SUB-BASIN P25S
 235          BA   0.028
 236          LG    0.35    0.35    4.35    0.40      15
 237          UC   0.634   0.564
 238          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 239          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE  7
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 240          KK   CP25S
 241          KM
 242          HC       2
              *

 243          KK    AFR0
 244          KM  Dummy Combination at Jomax Road and AFR
 245          HC       2
              *
              * ***********************************************************************

 246          KK      E1   BASIN
 247          KM  SUB-BASIN E1
 248          BA   0.014
 249          LG    0.33    0.32    3.95    0.48       2
 250          UC   0.281   0.201
 251          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 252          UA     100
              *

 253          KK     RE1
 254          KM  CHANNEL ROUTING
 255          RD    1993   .0376    .030            TRAP      10       4
              *

 256          KK      E2   BASIN
 257          KM  SUB-BASIN E2
 258          BA   0.016
 259          LG    0.30    0.25    3.95    0.48       5
 260          UC   0.388   0.377
 261          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 262          UA     100
              *

 263          KK     RE2
 264          KM  CHANNEL ROUTING
 265          RD    1108   .0542    .030            TRAP      10       4
              *

 266          KK     P13   BASIN
 267          KM  SUB-BASIN P13
 268          BA   0.059
 269          LG    0.26    0.25    3.92    0.57      27
 270          UC   0.401   0.257
 271          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 272          UA     100
```



```
              *

 273          KK    DT13
 274          KM
 275          DT    DB13   1.060
 276          DI       0     100     500    1000    5000
 277          DQ       0     100     500    1000    5000
              *
1                                          HEC-1 INPUT                                          PAGE  8
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 278          KK    CP13
 279          KM
 280          HC       3
              *

 281          KK     R13
 282          KM  CHANNEL ROUTING
 283          RD    1412   .0035    .025            TRAP      10       4
              *

 284          KK     P12   BASIN
 285          KM  SUB-BASIN P12
 286          BA   0.044
 287          LG    0.25    0.26    3.58    0.71      30
 288          UC   0.544   0.415
 289          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 290          UA     100
              *

 291          KK    DT12
 292          KM
 293          DT    DB12   1.140
 294          DI       0     100     500    1000    5000
 295          DQ       0     100     500    1000    5000
              *

 296          KK    CP12
 297          KM
 298          HC       2
              *

 299          KK      E3   BASIN
 300          KM  SUB-BASIN E3
 301          BA   0.082
 302          LG    0.31    0.28    3.95    0.48       4
 303          UC   0.797   0.827
 304          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 305          UA     100
              *

 306          KK     RE3
 307          KM  CHANNEL ROUTING
 308          RD    1473   .0339    .030            TRAP      10       4
              *

 309          KK     P10   BASIN
 310          KM  SUB-BASIN P10
 311          BA   0.055
 312          LG    0.25    0.26    3.78    0.63      29
 313          UC   0.522   0.329
 314          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
 315          UA     100
              *
1                                        HEC-1 INPUT                                                    PAGE  9
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 316          KK    DT10
 317          KM
 318          DT    DB10   1.080
 319          DI       0     100     500    1000    5000
 320          DQ       0     100     500    1000    5000
              *

 321          KK    CP10
 322          KM
 323          HC       2
              *

 324          KK     R10
 325          KM  CHANNEL ROUTING
 326          RD    1947   .0035    .025            TRAP      10       4
              *

 327          KK     P11   BASIN
 328          KM  SUB-BASIN P11
 329          BA   0.042
 330          LG    0.25    0.25    3.85    0.60      30
 331          UC   0.855   0.892
 332          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 333          UA     100
              *

 334          KK    DT11
 335          KM
 336          DT    DB11   1.200
 337          DI       0     100     500    1000    5000
 338          DQ       0     100     500    1000    5000
              *

 339          KK    CP11
 340          KM
 341          HC       2
              *

 342          KK      E4   BASIN
 343          KM  SUB-BASIN E4
 344          BA   0.040
 345          LG    0.34    0.33    4.00    0.47       3
 346          UC   0.720   0.924
 347          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 348          UA     100
              *

 349          KK     RE4
 350          KM  CHANNEL ROUTING
 351          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 352          RD
 353          RC    .015    .015    .015    1287   .0250
 354          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 355          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *
1                                        HEC-1 INPUT                                                    PAGE 10
```



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

 356          KK      P9   BASIN
 357          KM  SUB-BASIN P9
 358          BA   0.045
 359          LG    0.25    0.25    3.92    0.57      30
 360          UC   0.401   0.370
 361          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 362          UA     100
              *

 363          KK     DT9
 364          KM
 365          DT     DB9   0.920
 366          DI       0     100     500    1000    5000
 367          DQ       0     100     500    1000    5000
              *

 368          KK     HV1   BASIN
 369          KM  SUB-BASIN HV1
 370          BA   0.007
 371          LG    0.27    0.29    3.95    0.55      25
 372          UC   0.527   1.174
 373          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 374          UA     100
              *

 375          KK     CP9
 376          KM
 377          HC       3
              *

 378          KK      R9
 379          KM  CHANNEL ROUTING
 380          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 381          RD
 382          RC    .015    .015    .015     940   .0250
 383          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 384          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *

 385          KK      P8   BASIN
 386          KM  SUB-BASIN P8
 387          BA   0.013
 388          LG    0.25    0.25    4.15    0.52      30
 389          UC   0.647   0.779
 390          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 391          UA     100
              *

 392          KK     DT8
 393          KM
 394          DT     DB8   0.300
 395          DI       0     100     500    1000    5000
 396          DQ       0     100     500    1000    5000
              *
1                                        HEC-1 INPUT                                                    PAGE 11
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 397          KK      P7   BASIN
 398          KM  SUB-BASIN P7
```

```
399          BA   0.014
400          LG    0.25    0.25    3.95    0.56      30
401          UC   0.584   0.691
402          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
403          UA     100
             *

404          KK     DT7
405          KM
406          DT     DB7   0.300
407          DI       0     100     500    1000    5000
408          DQ       0     100     500    1000    5000
             *

409          KK     CP7
410          KM
411          HC       3
             *

412          KK      R7
413          KM  CHANNEL ROUTING
414          RD
415          RC    .015    .015    .015    1488   .0250
416          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
417          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
             *

418          KK      P6   BASIN
419          KM  SUB-BASIN P6
420          BA   0.070
421          LG    0.25    0.25    4.25    0.49      30
422          UC   1.147   1.475
423          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
424          UA     100
             *

425          KK     DT6
426          KM
427          DT     DB6   1.760
428          DI       0     100     500    1000    5000
429          DQ       0     100     500    1000    5000
             *

430          KK     CP6
431          KM
432          HC       2
             *
```



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

433          KK   HPVLY
434          KM
435          HC       3
             *
             *
             * ***********************************************************************
             *
             *

436          KK   A11MA   BASIN
437          KM  SUB-BASIN A11M North Portion
438          BA   0.073
```



```
439          LG    0.32    0.24    8.80    0.06       8
440          UC   0.330   0.153
441          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
442          UA     100
             *
             * On-site Retention Basin
             *

443          KK  A11MAQ
444          DT  DA11MA     3.4
445          DI       0     100    1000    1000
446          DQ       0     100    1000    1000
             *
             *
             *

447          KK  SA11MA STORAGE
448          KM  Online Detention Basin,  6.2 ac-ft.
449          RS       1    STOR       0
450          SV       0     1.5     2.5     4.0     6.2    10.0
451          SE       0       2       3       4       5       6
452          SL       0    3.14    0.62     0.5
453          SS       5      50     2.7     1.5
             *
             * ROUTE RA11MA IS 2000 FT WITH A SLOPE OF .0092
             * CROSS SECTION IS A SMALL NATURAL CHANNEL
             *

454          KK  RA11MA
455          RS       9    FLOW       0
456          RC    0.05    0.06    0.05    2000   .0092
457          RX       0     350     450     480     482     510     610     910
458          RY       7       6       5       1       0       5       6       7
             *

459          KK   A11MB   BASIN
460          KM  SUB-BASIN A11M South Portion
461          BA   0.194
462          LG    0.25    0.15    8.80    0.07      29
463          UC   0.489   0.213
464          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
465          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

466          KK  A11MBQ
467          DT  DA11MB     3.6
468          DI       0     100    1000    1000
469          DQ       0     100    1000    1000
             *

470          KK  SA11MB STORAGE
471          KM  Online Detention Basin, 11.2 ac-ft.
472          RS       1    STOR       0
473          SV       0     3.0     5.5     8.0    11.2    15.0
474          SE       0       2       3       4       5       6
475          SL       0    3.14    0.62     0.5
476          SS       5     200     2.7     1.5
             *
```

```
477          KK   A11NA   BASIN
478          KM  SUB-BASIN A11N - Revised
479          BA   0.076
480          LG    0.29    0.30    5.40    0.25      26
481          UC   0.306   0.178
482          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
483          UA     100
             *

484          KK  SA11NA STORAGE
485          KM  Online Detention Basin,  7.3 ac-ft.
486          RS       1    STOR       0
487          SV       0     1.0     3.0     5.0     7.3    11.0
488          SE       0       2       3       4       5       6
489          SL       0    3.14    0.62     0.5
490          SS       5     100     2.7     1.5
             *

491          KK  RA11NA
492          RS      11    FLOW       0
493          RC    0.05    0.06    0.05    2400  0.0090
494          RX       0     350     450     480     482     510     610     910
495          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE Flows of A11NA, A11MA AND A11MB
             *

496          KK  CA11MB
497          HC       3
             *
             * Route Flow to A11J
             *

498          KK  RA11MB
499          RS       8    FLOW       0
500          RC    0.05    0.06    0.05    3000   .0085
501          RX       0     350     450     480     482     510     610     910
502          RY       7       6       5       1       0       5       6       7
             *
```



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

503          KK    A11O   BASIN
504          KM  SUBASIN A11O
505          BA   0.056
506          LG    0.28    0.27    6.20    0.19      23
507          UC   0.360   0.331
508          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
509          UA     100
             *

510          KK   SA11O STORAGE
511          KM  Online Detention Basin,  3.1 ac-ft.
512          RS       1    STOR       0
513          SV       0     0.5     1.0     2.0     3.1     5.0
514          SE       0       2       3       4       5       6
515          SL       0    3.14    0.62     0.5
516          SS       5      50     2.7     1.5
             *
             * ROUTE A11O to A11KB
             *
```



```
517          KK   RA11O
518          RS       9    FLOW       0
519          RC    0.05     .06     .05    2500   .0085
520          RX       0     350     450     480     482     510     610     910
521          RY       7       6       5       1       0       5       6       7
             *

522          KK   A11KB   BASIN
523          KM  SUB-BASIN A11K North Portion
524          BA   0.107
525          LG    0.25    0.25    4.70    0.36      30
526          UC   0.499   0.270
527          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
528          UA     100
             *

529          KK  SA11KB STORAGE
530          KM  Online Detention Basin, 10.7 ac-ft.
531          RS       1    STOR       0
532          SV       0     3.0     5.0     7.0    10.7    15.0
533          SE       0       2       3       4       5       6
534          SL       0    3.14    0.62     0.5
535          SS       5     100     2.7     1.5
             *

536          KK   A11KA   BASIN
537          KM  SUB-BASIN A11K East Portion
538          BA   0.081
539          LG    0.27    0.27    4.45    0.42      42
540          UC   0.342   0.244
541          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
542          UA     100
             *
```



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

543          KK  SA11KA STORAGE
544          KM  Online Detention Basin,  9.6 ac-ft.
545          RS       1    STOR       0
546          SV       0     2.0     4.0     6.0     9.6    14.0
547          SE       0       2       3       4       5       6
548          SL       0    3.14    0.62     0.5
549          SS       5      50     2.7     1.5
             *
             * ROUTE A11KA to A11KB
             *

550          KK  RA11KA
551          RS       8    FLOW       0
552          RC    0.05     .06     .05    2000   .0075
553          RX       0     350     450     480     482     510     610     910
554          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE A11KB,A11KA AND A11O
             *

555          KK  CA11KB
556          HC       3
             *
             * ROUTE Flow of CA11KB to A11KC
             *
```

```
557          KK  RA11KB
558          RS       8    FLOW       0
559          RC    0.05    0.06    0.05    1600  0.0055
560          RX       0      50     250     350     360     420     620     720
561          RY      10       8       6       2       0       6       8      10
             *

562          KK    A11G   BASIN
563          KM  SUB-BASIN A11G
564          BA   0.060
565          LG    0.31    0.28    4.55    0.35      25
566          UC   0.550   0.491
567          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
568          UA     100
             *
             * ROUTE A11G to A11KC
             *

569          KK  RA11GN
570          RS       7    FLOW       0
571          RC    0.05     .06     .05    2300   0.010
572          RX       0     350     450     480     482     510     610     910
573          RY       7       6       5       1       0       5       6       7
             *
1                                                HEC-1 INPUT                                                          PAGE 16
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

574          KK   A11KC   BASIN
575          KM  SUB-BASIN A11K West Portion
576          BA   0.132
577          LG    0.27    0.26    4.15    0.50      27
578          UC   0.489   0.244
579          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
580          UA     100
             *

581          KK  SA11KC STORAGE
582          KM  Online Detention Basin,  6.4 ac-ft.
583          RS       1    STOR       0
584          SV       0     1.5     2.5     4.0     6.4    10.0
585          SE       0       2       3       4       5       6
586          SL       0    3.14    0.62     0.5
587          SS       5      50     2.7     1.5
             *
             * COMBINE RA11KB, RA11G, AND A11KC
             *

588          KK  CA11KC
589          HC       3
             *
             * ROUTE CA11KC to A11J
             * CROSS SECTION IS A MEDIUM NATURAL CHANNEL
             *

590          KK  RA11KC
591          RS       4    FLOW       0
592          RC    0.05     .06     .05    1000   .0055
593          RX       0      50     250     350     360     420     620     720
594          RY      10       8       6       2       0       6       8      10
             *
```



```
595          KK    A11J   BASIN
596          KM  SUB-BASIN A11J
597          BA   0.112
598          LG    0.29    0.22    7.30    0.12      18
599          UC   0.740   0.589
600          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
601          UA     100
             *

602          KK   SA11J STORAGE
603          KM  Online Detention Basin,  4.4 ac-ft.
604          RS       1    STOR       0
605          SV       0     1.0     2.0     3.0     4.4     7.0
606          SE       0       2       3       4       5       6
607          SL       0    3.14    0.62     0.5
608          SS       5      50     2.7     1.5
             *
             * COMBINE Flows of RA11MB, A11J, AND RA11KC
             *
1                                                HEC-1 INPUT                                                          PAGE 17
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

609          KK   CA11J
610          HC       3
             *

611          KK    A11L   BASIN
612          KM  SUB-BASIN A11L
613          BA   0.264
614          LG    0.27    0.12   11.20    0.03      24
615          UC   0.872   0.652
616          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
617          UA     100
             *
             * On-site Retention Basin
             *     GP

618          KK  DA11LQ
619          DT   DA11L     7.6
620          DI       0     100    1000    1000
621          DQ       0     100    1000    1000
             *
             * ROUTE FLOW TO A11I FROM A11L                                                                            G
             *

622          KK   RA11L
623          RS       9    FLOW       0
624          RC    0.05    0.06    0.05    2600   .0069
625          RX       0     350     450     480     482     510     610     910
626          RY       7       6       5       1       0       5       6       7
             *

627          KK    A11I   BASIN
628          KM  SUB-BASIN A11I
629          BA   0.153
630          LG    0.25    0.10   11.20    0.03      28
631          UC   0.634   0.409
632          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
633          UA     100
             *
             * On-site Retention Basin
             *
```

```
 634          KK  DA11IQ
 635          DT   DA11I    11.7
 636          DI       0     100    1000    1000
 637          DQ       0     100    1000    1000
              *
              * COMBINE Flows of CA11J, A11I, and RA11L
              *
1                                   HEC-1 INPUT                                                    PAGE 18

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

 638          KK   CA11I
 639          HC       3
              *
              * ROUTE FLOW TO A11EB FROM CA11I
              *

 640          KK   RA11I
 641          RS       9    FLOW       0
 642          RC    0.05     .06     .05    4000   .0075
 643          RX       0      50     100     150     180     230     280     330
 644          RY      10       8       6       0       0       6       8      10
              *

 645          KK   A11EA   BASIN
 646          KM  SUB-BASIN A11E East Portion
 647          BA   0.144
 648          LG    0.33    0.31    4.30    0.41      11
 649          UC   0.793   0.737
 650          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 651          UA     100
              *
              * ROUTE FLOW TO A11EB FROM A11EA
              *

 652          KK  RA11EA
 653          RS       6    FLOW       0
 654          RC    0.05     .06     .05    1500   .0065
 655          RX       0      50     250     320     360     420     620     720
 656          RY      10       8       6       0       0       6       8      10
              *

 657          KK   A11EB   BASIN
 658          KM  SUB-BASIN A11E West Portion
 659          BA   0.190
 660          LG    0.34    0.34    4.45    0.38       4
 661          UC   1.133   1.174
 662          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 663          UA     100
              *
              * COMBINE Flows of A11EA, A11EB, and RA11I
              *

 664          KK  CA11EB
 665          HC       3
              *

 666          KK      41   BASIN
 667          KM  SUB-BASIN 41
 668          BA   0.054
 669          LG    0.34    0.34    4.40    0.39      21
 670          UC   0.324   0.225
```



```
 671          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 672          UA     100
              *
1                                   HEC-1 INPUT                                                    PAGE 19

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

 673          KK     B41
 674          KM  Storage Route Runoff through Detention Basin @41
 675          KM  Outlet Structure:  1-48" PIPE
 676          RS       1    STOR       0
 677          SA     .09     .18     .27      .4
 678          SE    1433    1435    1437    1440
 679          SQ       0      23      71     132
              *

 680          KK      42   BASIN
 681          KM  SUB-BASIN 42
 682          BA   0.075
 683          LG    0.35    0.35    4.25    0.42      44
 684          UC   0.324   0.231
 685          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 686          UA     100
              *

 687          KK     B42
 688          KM  Storage Route Runoff through Detention Basin @42
 689          KM  Outlet Structure:  48" PIPE
 690          RS       1    STOR       0
 691          SA     .07     .13     .21     .31      .4
 692          SE    1427    1429    1431    1433    1435
 693          SQ       0      23      71     112     147
              *
              * COMBINE Flows of 41 and 42                                                          G
              *

 694          KK     C41
 695          HC       2
              *
              * ROUTE FLOW TO A11F FROM C41
              *

 696          KK    RC41
 697          RS      14    FLOW       0
 698          RC    0.05     .06     .05    5200   .0075
 699          RX       0      50      70      90     110     130     150     200
 700          RY       6       5       3       0       0       3       5       6
              *

 701          KK    A11F   BASIN
 702          KM  SUB-BASIN A11F
 703          BA   0.334
 704          LG    0.33    0.31    4.35    0.40       8
 705          UC   0.837   0.581
 706          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 707          UA     100
              *
              * COMBINE Flows of A11F and RC41                                                      G
              *
1                                   HEC-1 INPUT                                                    PAGE 20

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

```
708          KK   CA11F
709          HC       2
             *
             * COMBINE Flows of CA11F and CA11EB
             *

710          KK   CA11E
711          HC       2
             *
             * ROUTE FLOW TO A11A FROM CA11E
             *

712          KK   RA11E
713          RS       3    FLOW       0
714          RC    0.05     .06     .05    1700   .0070
715          RX       0      50      70      90     110     130     150     200
716          RY       6       5       3       0       0       3       5       6
             *

717          KK    A09U   BASIN
718          KM  SUB-BASIN A09U
719          BA   0.175
720          LG    0.32    0.30    4.20    0.43      22
721          UC   0.450   0.302
722          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
723          UA     100
             *
             * Happy Valley RD. Improvements
             * 0 % FLOW GOES DOWN to South,100% WEST along HAPPY VALLEY
             *

724          KK   DA09U
725          DT   A09UI     0.0     0.0
726          DI     0.0    10.0   100.0  1000.0  5000.0     0.0     0.0     0.0     0.0     0.0
727          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CA09T FROM A09U                                                   G
             *

728          KK  RA09UW
729          RS       9    FLOW       0
730          RC    0.05    0.03     .05    4000   .0075
731          RX       0     200     210     220     240     270     295     595
732          RY     4.5       2       0       2       3       3     3.5     4.5
             *

733          KK    A09T   BASIN
734          KM  SUB-BASIN A09T
735          BA   0.182
736          LG    0.33    0.31    4.30    0.41       2
737          UC   0.752   0.547
738          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
739          UA     100
             *
             * COMBINE  CA09U AND A09T
             *
```



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

740          KK   CA09T
741          HC       2
```



```
             *
             * HAPPY VALLEY ROAD Improvements, 100% Flow TO THE WEST
             *

742          KK   DA09T
743          DT   A09TI     0.0     0.0
744          DI     0.0    10.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0
745          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CX22 FROM CA09T
             *

746          KK  RA09TW
747          RS       2    FLOW       0
748          RC    0.05    0.03    0.05    1500   .0025
749          RX       0     200     210     220     230     270     295     595
750          RY       6       4       0       0       4       4     5.5       7
             *

751          KK    A11A   BASIN
752          KM  SUB-BASIN A11A
753          BA   0.298
754          LG    0.23    0.29    6.00    0.21      34
755          UC   0.721   0.472
756          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
757          UA     100
             *
             * On-site Retention Basin
             *     GP

758          KK  DA11AQ
759          DT   DA11A     7.7
760          DI       0     100    1000    1000
761          DQ       0     100    1000    1000
             *
             * Combine  Flows of RA09TW, CA11E,and A11A
             *

762          KK    CX23
763          HC       3
             *
             * ROUTE FLOW TO CS1 FROM CX23                                                      GP
             *

764          KK    RX23
765          RS       7    FLOW       0
766          RC    0.05     .06     .05    4000   .0074
767          RX       0      50     150     175     275     300     400     500
768          RY      12       8       6       0       0       6       8      12
             *
```



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

769          KK      S1   BASIN
770          KM  SUB-BASIN S1
771          BA   0.124
772          LG    0.31    0.27    4.25    0.47      12
773          UC   0.790   0.720
774          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
775          UA     100
             *
```

```
776          KK      P2   BASIN
777          KM  SUB-BASIN P2
778          BA   0.051
779          LG    0.25    0.25    4.45    0.43      29
780          UC   0.404   0.266
781          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
782          UA     100
             *

783          KK     RT2
784          KM
785          DT     RB2   4.740
786          DI       0     100     500    1000    5000
787          DQ       0     100     500    1000    5000
             *

788          KK     CS1
789          KM
790          HC       3
             *

791          KK     RS1
792          KM  CHANNEL ROUTING
793          RD     924   .0108    .035            TRAP     200       6
             *

794          KK      S2   BASIN
795          KM  SUB-BASIN S2
796          BA   0.012
797          LG    0.34    0.33    4.70    0.32       3
798          UC   0.270   0.156
799          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
800          UA     100
             *

801          KK      S3   BASIN
802          KM  SUB-BASIN S3
803          BA   0.006
804          LG    0.30    0.25    4.65    0.32       5
805          UC   0.208   0.126
806          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
807          UA     100
             *
```



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

808          KK     CS2
809          KM
810          HC       3
             *

811          KK     RS2
812          KM  CHANNEL ROUTING
813          RD     665   .0075    .020            TRAP      20       4
             *

814          KK      P3   BASIN
815          KM  SUB-BASIN P3
816          BA   0.054
817          LG    0.25    0.25    4.45    0.43      30
818          UC   0.551   0.475
819          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



```
820          UA     100
             *

821          KK     RT3
822          KM
823          DT     RB3   5.230
824          DI       0     100     500    1000    5000
825          DQ       0     100     500    1000    5000
             *

826          KK     CP3
827          KM
828          HC       2
             *

829          KK     P4b   BASIN
830          KM  SUB-BASIN P4b
831          BA   0.017
832          LG    0.25    0.25    4.45    0.43      30
833          UC   0.287   0.173
834          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
835          UA     100
             *

836          KK    RT4b
837          KM
838          DT    RB4b   0.320
839          DI       0     100     500    1000    5000
840          DQ       0     100     500    1000    5000
             *

841          KK      S4   BASIN
842          KM  SUB-BASIN S4
843          BA   0.014
844          LG    0.33    0.31    4.80    0.30       2
845          UC   0.493   0.772
846          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
847          UA     100
             *
```



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

848          KK      P1   BASIN
849          KM  SUB-BASIN P1
850          BA   0.029
851          LG    0.34    0.38    6.00    0.18       1
852          UC   0.496   0.552
853          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
854          UA     100
             *

855          KK     DT1
856          KM
857          DT     DB1   0.500
858          DI       0     100     500    1000    5000
859          DQ       0     100     500    1000    5000
             *

860          KK     CP1
861          KM
862          HC       2
             *
```

```
863          KK     HV2   BASIN
864          KM  SUB-BASIN HV2
865          BA   0.031
866          LG    0.25    0.25    4.45    0.43      29
867          UC   1.500   5.175
868          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
869          UA     100
             *

870          KK    RHV2
871          KM  CHANNEL ROUTING
872          RD     910   .0033    .015            TRAP      10       4
             *

873          KK   DTHV2
874          KM
875          DT   DBHV2   0.680
876          DI       0     100     500    1000    5000
877          DQ       0     100     500    1000    5000
             *

878          KK     P4a   BASIN
879          KM  SUB-BASIN P4a
880          BA   0.039
881          LG    0.25    0.25    4.00    0.55      30
882          UC   0.636   0.586
883          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
884          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 25

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

885          KK    DT4a
886          KM
887          DT    DB4a   0.740
888          DI       0     100     500    1000    5000
889          DQ       0     100     500    1000    5000
             *

890          KK   SOUTH
891          KM  Combined at South HVR
892          HC       5
             *

893          KK    N11O   BASIN
894          KM  SUB-BASIN N11O
895          BA   0.054
896          LG    0.35    0.35    4.50    0.36       0
897          UC   0.632   0.483
898          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
899          UA     100
             *
             * A WASH TO THE WEST THAT CARRIES A MAX. FLOW OF 47 CFS.
             *

900          KK   DN11O
901          DT   N11OI
902          DI       0      30      60     100     300     600    1200    2200
903          DQ       0      27      54      90     270     553    1153    2153
             *
             * ROUTE RN11OW IS 2752 FT WITH A SLOPE OF .0025
```



```
             * CROSS SECTION IS A MEDIUM NATURAL WASH
             *

904          KK  RN11OW
905          RS      15    FLOW       0
906          RC    0.05     .06     .05    2752   .0025
907          RX       0      50     250     350     360     420     620     720
908          RY      10       8       6       2       0       6       8      10
             *
             * RECOVER DIVERTED FLOW FROM CA09T
             *

909          KK  DRA09T
910          DR   A09TI
             *
             * ROUTE RA09TS IS 2824 FT WITH A SLOPE OF .0057
             * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
             * ROUTE FLOW TO CA09R FROM CA09T
             *
1                                          HEC-1 INPUT                                          PAGE 26

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

911          KK  RA09TS
912          RS      15    FLOW       0
913          RC    0.05     .06     .05    2824   .0057
914          RX       0     400     800    1200    1600    2000    2400    2800
915          RY       3       1      .5       0       0      .5       1       3
             *

916          KK    A09R   BASIN
917          KM  SUB-BASIN A09R
918          BA   0.144
919          LG    0.35    0.34    4.25    0.43       1
920          UC   1.090   0.945
921          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
922          UA     100
             *
             * COMBINE  CN11O,  CA09T, AND A09R
             *

923          KK   CA09R
924          HC       3
             *
             * EXISTING CONDITIONS FLOW DOWN LAKE PLEASANT RD
             *

925          KK   DA09R
926          DT   A09RI
927          DI       0      10      50     100     300     500     800    1000    2000
928          DQ       0     9.9    49.3    99.4   299.5     499     799     999    1999
             *
             * ROUTE RA09RW IS 1609 FT WITH A SLOPE OF .0012
             * *** ROUTE FLOW TO CA09S FROM CA09R  ************************
             *

929          KK  RA09RW
930          RS      15    FLOW       0
931          RC    0.05    0.04     .05    1609  0.0012
932          RX       0     200     300     325     340     360     380     880
933          RY       5       4       3       2       3       3       2     3.5
             *
```

```
934          KK    A09S   BASIN
935          KM  SUB-BASIN A09S
936          BA   0.072
937          LG    0.13    0.25    4.90    0.40      71
938          UC   0.626   0.548
939          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
940          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

941          KK  DA09SQ
942          DT   DA09S     7.0
943          DI       0     100    1000    1000
944          DQ       0     100    1000    1000
             *
             * *** COMBINE  RA09RW AND A09S ***********************************************
             *

945          KK   CA09S
946          HC       2
             *

947          KK  RA09SW
948          RS       6    FLOW       0
949          RC    0.03    0.03    0.03    1600  0.0085
950          RX       0      50     100     120     140     160     210     260
951          RY       6       4       3       0       0       3       4       6
             *

952          KK   A09QA   BASIN
953          KM  SUB-BASIN A09Q North Portion
954          BA   0.092
955          LG    0.34    0.34    4.20    0.44       2
956          UC   0.731   0.470
957          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
958          UA     100
             *
             * *** COMBINE  Flows of RA09SW and A09QA ***************************************
             *

959          KK  CA09QA
960          HC       2
             *
             * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ****************************
             * FUTURE SPLIT: ALL EXISTING FLOW TO THE SOUTH
             *

961          KK  DA09QA
962          DT  A09QAI
963          DI       0      10      30      50     100     500    1000    2000
964          DQ       0     9.2    29.3    49.4    99.5     499     999    1999
             *
             * *** ROUTE CA09QA TO CA99YA ******************************************
             *

965          KK  RA09QW
966          RS       4    FLOW       0
967          RC    0.03    0.03    0.03    2400  0.0085
968          RX       0      50     100     120     140     160     210     260
```



```
969          RY       6       4       3       0       0       3       4       6
             *
```



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

970          KK   A99YA   BASIN
971          KM  SUB-BASIN A99Y East Portion
972          BA   0.103
973          LG    0.35    0.34    4.90    0.29       1
974          UC   0.568   0.414
975          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
976          UA     100
             *
             * *** COMBINE  RA09QW AND A99YA ***********************************************
             *

977          KK  CA99YA
978          HC       2
             *

979          KK  RA99YA
980          RS       3    FLOW       0
981          RC    0.03    0.03    0.03    2000  0.0085
982          RX       0      50     100     120     140     160     210     260
983          RY       6       4       3       0       0       3       4       6
             *

984          KK   A99YB   BASIN
985          KM  SUB-BASIN A99Y West Portion
986          BA   0.171
987          LG    0.34    0.34    3.78    0.55       4
988          UC   0.764   0.424
989          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
990          UA     100
             *
             * *** COMBINE  RA99YA, SOUTH AND A99YB ********************************************
             *

991          KK  CA99YB
992          HC       3
             *
             *
             * Dummy Combining at AFR and South of Happy Valley Rd.
             *

993          KK    AFR1
994          HC       3
             *
             * RECOVER DIVERTED FLOW FROM A09U
             *

995          KK  BA09UI
996          DR   A09UI
             *
             * *** ROUTE RA09US ***************************************************************
             * ROUTE RA09US IS 3000 FT WITH A SLOPE OF 0.0076
             * CROSS SECTION IS A SMALL ROAD WITH HOMES ON THE WEST SIDE
             * ALONG local STREETS
             * *** ROUTE FLOW TO N11NB FROM Happy Valley RD (CA09U)
             *
```

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

 997          KK  RA09US
 998          RS       6    FLOW       0
 999          RC    0.04    0.03    0.04    3000  0.0076
1000          RX       0       1      54      55      95      96     124     624
1001          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *
              *

1002          KK   N11NB   BASIN
1003          KM  SUB-BASIN N11NBN
1004          BA   0.140
1005          LG    0.31    0.27    4.70    0.31       4
1006          UC   0.767   0.672
1007          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1008          UA     100
              *
              * Combining Flows
              *

1009          KK  CN11NB
1010          HC       2
              *
              * ROUTE RN11NW IS 2521 FT WITH A SLOPE OF 0.0016
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO BOTH SIDES
              * ALONG Mariposa GrANDe
              *

1011          KK  RN11NW
1012          RS      12    FLOW       0
1013          RC    0.04    0.03    0.04    2521  0.0016
1014          RX       0       1      70      71      96      97     182     183
1015          RY    9.25    1.25    0.25       0       0    0.25    1.25    9.25
              *
              * RECOVER DIVERTED FLOW FROM N11OI

1016          KK  BN11OI
1017          DR   N11OI
              *
              * ROUTE RN11OS IS 1184 FT WITH A SLOPE OF 0.0068
              * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
              * ALONG natural pathways
              * ROUTE FLOW TO Mariposa GrANDe (CN11M) FROM CN11O
              *

1018          KK  RN11OS
1019          RS      15    FLOW       0
1020          RC    0.05     .06     .05    1184  0.0068
1021          RX       0     400     800    1200    1600    2000    2400    2800
1022          RY       3       1      .5       0       0      .5       1       3
              *
```



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

1023          KK    N11M   BASIN
1024          KM  SUB-BASIN N11M
1025          BA   0.100
1026          LG    0.35    0.35    4.15    0.45       0
1027          UC   0.660   0.374
1028          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1029          UA     100
              *
              * *** COMBINE  CN11M ******************************************************
              * COMBINE BASIN N11M, RN11OS, and RN11NW
              * Mariposa GrANDe AND 95st AVE
              *

1030          KK   CN11M
1031          HC       3
              *
              * *** DIVERSION DN11M ********************************************************
              * DIVERSION MAIN 95th AVE(SOUTH), SPLIT (WEST)
              *

1032          KK   DN11M
1033          DT   N11MI
1034          DI       0       1      40      80     100     300     600    1200    2200
1035          DQ       0     .25      10      20      25      75     150     184     184
              *
              * ROUTE RN11MS IS 2689 FT WITH A SLOPE OF 0.0071
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO ONE SIDE
              * ALONG 95st AVE
              * ROUTE FLOW TO PINNACLE PEAK (CN11J) FROM Mariposa GrANDe (CN11M)
              *

1036          KK  RN11MS
1037          RS       7    FLOW       0
1038          RC    0.05    0.03    0.05    2689  0.0071
1039          RX       0       1      50      51      73      74     124     524
1040          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *

1041          KK    N11J   BASIN
1042          KM  SUB-BASIN N11J
1043          BA   0.244
1044          LG    0.30    0.25    4.10    0.51      13
1045          UC   1.122   0.817
1046          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1047          UA     100
              *
              * *** STORAGE ROUTING LN11J ***********************************************
              * *** SMALL SUBDIVISION STORAGE (ACCOUNTED) ******************************
              *
```



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

1048          KK   LN11J
1049          DT  LN11JD     1.8
1050          DI       0     100    1000   10000
1051          DQ       0     100    1000   10000
              *
              * COMBINE N11J AND RN11KW
              * Pinnacle Peak AND 95st AVE
              *

1052          KK   CN11J
1053          HC       2
              *
              * Existing Condition 100% to South
              *

1054          KK   DN11J
```

```
1055          DT   N11JI
1056          DI       0      10     100    1000    5000
1057          DQ       0      10     100    1000    5000
              *
              * ROUTE RN11JW IS 1080 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *
              * ROUTE FLOW TO CX4 FROM CN11J
              *

1058          KK  RN11JW
1059          RS       1    FLOW       0
1060          RC     .04    0.04     .04    1080   .0019
1061          RX       0     100     140     160     200     300     400     500
1062          RY      10       9       0       0       9      10      11      12
              *
              * RECOVER DIVERTED FLOW FROM CN11M
              *

1063          KK  DRN11M
1064          DR   N11MI
              *
              * ROUTE RN11MW IS 3871 FT WITH A SLOPE OF .0046
              * CROSS SECTION IS A ROAD WITH HOMES TO THE WEST SIDE
              * ROUTE FLOW TO CX4 FROM CN11M
              *

1065          KK  RN11MW
1066          RS      15    FLOW       0
1067          RC    0.05    0.04     .05    3871   .0046
1068          RX       0       1      50      51      76      77     102     602
1069          RY      10       2       1    0.75    0.75       1       2     3.5
              *
              * *** COMBINE  CN11J AND CN11M ***********************************************
              *
```



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

1070          KK     CX4
1071          HC       2
              *
              * ROUTE RX4 IS 2164 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09O FROM CX4  **************************
              *

1072          KK     RX4
1073          RS       6    FLOW      -1
1074          RC     .04    0.04     .04    2164  0.0023
1075          RX       0     100     140     160     200     300     400     500
1076          RY      10       9       0       0       9      10      11      12
              *

1077          KK    A09O   BASIN
1078          KM  SUB-BASIN A09O
1079          BA   0.194
1080          LG    0.32    0.29    4.40    0.41       6
1081          UC   1.263   1.308
1082          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1083          UA     100
              *
```



```
1084          KK   SA09O STORAGE
1085          KM  Online Detention Basin, 28.5 ac-ft.
1086          RS       1    STOR       0
1087          SV       0     9.0    15.0    21.0    28.5    38.0
1088          SE       0       2       3       4       5       6
1089          SL       0   7.065    0.62     0.5
1090          SS       5     100     2.7     1.5
              *
              * RECOVER DIVERTED FLOW FROM A09RI
              *

1091          KK  BA09RI
1092          DR   A09RI
              *
              * ROUTE RA09RS IS 3928 FT WITH A SLOPE OF .0074
              * CROSS SECTION IS A HIGHWAY
              * ROUTE FLOW TO CA09O FROM CA09R
              *

1093          KK  RA09RS
1094          RS      12    FLOW       0
1095          RC    0.05    0.04    0.05    3928   .0074
1096          RX       0     100     200     225     250     275     375     475
1097          RY       6       5       4       3       3       4       5       6
              *
              * *** COMBINE  CX4, RA09RS, AND A09O ******************************************
              *
```



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

1098          KK   CA09O
1099          HC       3
              *
              * Existing Condition: All Flow to South
              *

1100          KK   DA09O
1101          DT   A09OI
1102          DI       0     100    1000    5000
1103          DQ       0     100    1000    5000
              *
              *
              * ROUTE RA09OW IS 1076 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09P FROM CA09O  **************************
              *

1104          KK  RA09OW
1105          RS       1    FLOW       0
1106          RC     .04     .04     .04    1076  0.0019
1107          RX       0     100     140     160     200     300     400     500
1108          RY      10       9       0       0       9      10      11      12
              *

1109          KK    A09P   BASIN
1110          KM  SUB-BASIN A09P
1111          BA   0.187
1112          LG    0.32    0.29    4.65    0.34       6
1113          UC   0.981   0.716
1114          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1115          UA     100
              *
```

```
1116          KK   SA09P STORAGE
1117          KM  Online Detention Basin, 25.2 ac-ft.
1118          RS       1    STOR       0
1119          SV       0     7.0    13.0    19.0    25.2    33.0
1120          SE       0       2       3       4       5       6
1121          SL       0   7.065    0.62     0.5
1122          SS       5     100     2.7     1.5
              *
              * *** COMBINE  CA09O AND A09P ***************************************************
              *

1123          KK   CA09P
1124          HC       2
              *
              * ROUTE RA09P IS 884 FT WITH A SLOPE OF .0136
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09Q FROM CA09P  *************************
              *
1                                          HEC-1 INPUT                                          PAGE 34

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

1125          KK   RA09P
1126          RS       2    FLOW       0
1127          RC     .04     .04     .04     884  0.0136
1128          RX       0     100     140     160     200     300     400     500
1129          RY      10       9       0       0       9      10      11      12
              *
              * Retrieve Diverted Flow of A09QAI
              *

1130          KK  BA09QA
1131          DR  A09QAI
              *
              * *** ROUTE FLOW TO CA09QB FROM CA09QA *************************
              *

1132          KK  RA09QB
1133          RS       8    FLOW       0
1134          RC    0.05     .06     .05    2700  0.0095
1135          RX       0     100     300     360     380     420     620     720
1136          RY      10       8       6       2       0       6       8      10
              *

1137          KK   A09QB   BASIN
1138          KM  SUB-BASIN A09Q South Portion
1139          BA   0.144
1140          LG    0.30    0.25    4.15    0.44       5
1141          UC   0.857   0.625
1142          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1143          UA     100
              *
              * *** COMBINE Flows of A09QA,A09QB  and RA09P  ********************************
              *

1144          KK   CA09Q
1145          HC       3
              *
              * Existing Condition:All Flow to South
              *

1146          KK   DA09Q
```



```
1147          DT   A09QI
1148          DI       0      10     100     500    1000    5000
1149          DQ       0      10     100     500    1000    5000
              *
              * ROUTE RA09QW IS 2468 FT WITH A SLOPE OF 0.0158
              * CROSS SECTION IS A MEDIUM CHANNEL
              * *** ROUTE CA09Q TO CA10A ********************************************
              *
1                                          HEC-1 INPUT                                          PAGE 35

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

1150          KK  RA09QW
1151          RS       1    FLOW       0
1152          RC     .05     .05     .05    2468  0.0158
1153          RX       0     100     140     160     200     300     400     500
1154          RY      10       9       0       0       9      10      11      12
              *

1155          KK    A10A   BASIN
1156          KM  SUB-BASIN A10A
1157          BA   0.189
1158          LG    0.33    0.32    5.30    0.24       2
1159          UC   0.714   0.466
1160          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1161          UA     100
              *

1162          KK   CA10A
1163          HC       2
              *
              * ROUTE RA10A IS 2831 FT WITH A SLOPE OF 0.0148
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *

1164          KK   RA10A
1165          RS       2    FLOW       0
1166          RC    0.05    0.05    0.05    1553     .03
1167          RX       0     100     140     170     210     310     410     510
1168          RY      10       9       0       0       9      10      11      12
              *

1169          KK    A99X   BASIN
1170          KM  SUB-BASIN A99X
1171          BA   0.264
1172          LG    0.21    0.28    4.20    0.53      39
1173          UC   0.527   0.261
1174          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1175          UA     100
              *

1176          KK   CA99X
1177          HC       2
              *
              * Dummy Combination at AFR and Pinnacle Peak Rd.
              *

1178          KK    AFR2
1179          HC       2
              *
              * Retrieve Diverted Flow of A09OI
              *
1                                          HEC-1 INPUT                                          PAGE 36
```

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

1180          KK  BA09OI
1181          DR   A09OI
              *
              * ROUTE RA09OS IS 5602 FT WITH A SLOPE OF .0062
              * CROSS SECTION IS A RURAL ROAD WITH A DITCH RIGHT
              * *** ROUTE FLOW TO CX7 FROM CA09O  ****************************
              *

1182          KK  RA09OS
1183          RS       8    FLOW       0
1184          RC     .03     .03     .03    5602   .0062
1185          RX       0     200     220   227.5     235     255     300     460
1186          RY       4       2       0       0       2     2.5       3       4
              *

1187          KK    A09K   BASIN
1188          KM  SUB-BASIN A09K
1189          BA   0.410
1190          LG    0.34    0.34    4.40    0.39       2
1191          UC   1.156   0.791
1192          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1193          UA     100
              *

1194          KK   DA09K
1195          KM  DIVERSION DA09K
1196          KM  DIVERSION SPLITS FLOW WITHIN SUB-BASIN A09K BASED ON TOPOGRAPHICAL SPLIT
1197          KM  A PORTION OF THE FLOW IS DIRECTED WEST TO LAKE PLEASANT PARKWAY
1198          KM  THE REMAINDER IS DIRECTED TO N11FA
1199          DT   A09KI
1200          DI       0     100     200     300     400     500     600     700    2000
1201          DQ       0      73     146     219     292     365     438     511    1460
              *

1202          KK     CX7
1203          KM  COMBINE Flows from North and East
1204          HC       2
              *

1205          KK    RX7S
1206          KM  ROUTE FLOW SOUTH TO CX8 FROM CX7
1207          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1208          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1209          KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE WEST SIDE
1210          RS       5    FLOW       0
1211          RC     .03     .03     .03    2800    .002
1212          RX       0       3       9      15      35      41      47      50
1213          RY       5       4       2       0       0       2       4       5
              *
              * North Portion of N11N
              *
1                                                HEC-1 INPUT                                          PAGE 37

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

1214          KK   N11NA   BASIN
1215          KM  UPPER PART OF SUBBASIN N11N
1216          BA   0.022
1217          LG    0.35    0.35    4.00    0.47      29
```



```
1218          UC   0.229   0.146
1219          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1220          UA     100
              *

1221          KK  RN11NA
1222          RS      13    FLOW       0
1223          RC    0.05    0.04     .05    3500  0.0083
1224          RX       0       1      51      52      82      83     108     608
1225          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.75
              *

1226          KK   N11NC   BASIN
1227          KM  East PART OF SUBBASIN N11N
1228          BA   0.171
1229          LG    0.31    0.29    4.20    0.46       7
1230          UC   0.608   0.382
1231          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1232          UA     100
              *

1233          KK  CN11NC
1234          HC       2
              *

1235          KK  DN11NC
1236          KM  DIVERT FLOW 10-YEAR RUNOFF (149 cfs) to East
1237          DT   N11NP
1238          DI       0     149    2000
1239          DQ       0     149     149
              *

1240          KK  RN11NC
1241          KM  ROUTE N11NC to South
1242          RS       5    FLOW      -1
1243          RC    0.05    0.04     .05    1600  0.0089
1244          RX       0      10      20      30      70      80      90     100
1245          RY       3       2       1       0       0       1       2       3
              *

1246          KK   N11ND   BASIN
1247          KM  LOWER PART OF SUBBASIN N11N
1248          BA   0.053
1249          LG    0.29    0.25    4.60    0.36      12
1250          UC   0.748   0.687
1251          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1252          UA     100
              *
1                                                HEC-1 INPUT                                          PAGE 38

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

1253          KK    N11K   BASIN
1254          KM  SUB-BASIN N11K
1255          BA   0.167
1256          LG    0.30    0.25    4.20    0.46       9
1257          UC   1.030   0.825
1258          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1259          UA     100
              *

1260          KK   CN11K
1261          KM  COMBINE N11K, RN11NC AND N11ND AT 91ST AVENUE AND PINNACLE PEAK
```

```
1262        HC       3
            *
            * Divert 10-Year Flow (55 cfs) into SD to East

1263        KK  DN11KS
1264        DT   N11KP
1265        DI       0      55     500    2000
1266        DQ       0      55      55      55
            *

1267        KK   RN11K
1268        RS      15    FLOW       0
1269        RC     .04    0.04     .04    5178   .0062
1270        RX       0     200     230     260     280     310     340     540
1271        RY      10       8       7       0       0       7       8      10
            *
            * Initial flow goes to west and excess flow splits to southeast
            * DIVERSION HAS BEEN MODIFIED FROM ORIGINAL ENTELLUS STUDY
            * PER CITY OF PEORIA COMMENTS (1/18/05)
            *

1272        KK     DX5
1273        DT     X5I
1274        DI       0      10     100     200     300     400     500    1000    2000
1275        DQ       0       0       0      94     154     249     344     844    1844
            *
            * ROUTE RX5W IS 1292 FT WITH A SLOPE OF 0.0008
            * CROSS SECTION IS DIRT ROAD
            * WEST ALONG DEER VALLEY RD
            * ROUTE FLOW FROM 91st AVE. (CN11H) TO WEST OF 91st AVE (CX5)
            *

1276        KK    RX5W
1277        RS      11    FLOW       0
1278        RC    0.05   0.045    0.05    1292   .0008
1279        RX       0     200     225     250     270     295     320     520
1280        RY    4.25    2.25    1.25       0       0    1.25    2.25    4.25
            *
```



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

1281        KK    N11H   BASIN
1282        KM  SUB-BASIN N11H
1283        BA   0.419
1284        LG    0.35    0.35    4.50    0.36       0
1285        UC   1.162   0.741
1286        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1287        UA     100
            *
            * COMBINE RX5W AND BASIN N11H
            *

1288        KK   CN11H
1289        HC       2
            *
            * NEW ALTERNATIVE CHANNEL ACROSS STATE LAND
            *

1290        KK   RN11H
1291        KM  ROUTE FLOW WEST TO CN11G FROM CN11H
1292        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1293        KM  3:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
```



```
1294        KM  ADJACENT TO DEAR VALLEY ROAD ON THE NORTH SIDE
1295        RS       7    FLOW       0
1296        RC     .03     .03     .03    3300    .001
1297        RX       0       3      12      18      38      44      53      56
1298        RY       6       5       2       0       0       2       5       6
            *
            * RECOVER DIVERTED FLOW FROM N11J                                          G
            *

1299        KK  BN11JI
1300        DR   N11JI
            *
            * ROUTE RN11JS IS 5670 FT WITH A SLOPE OF 0.0062
            * CROSS SECTION IS A SMALL NATURAL WASH
            * ALONG NATURAL WASH
            * ROUTE FLOW TO DEER VALLEY RD. (CN11G) FROM PINNACLE PEAK (CN11J)
            *

1301        KK  RN11JS
1302        RS      12    FLOW       0
1303        RC    0.05   0.06    0.05    5670  0.0062
1304        RX       0     350     450     480     482     510     610     910
1305        RY       7       6       5       1       0       5       6       7
            *

1306        KK    N11G   BASIN
1307        KM  SUB-BASIN N11G
1308        BA   0.524
1309        LG    0.35    0.35    4.35    0.40       0
1310        UC   1.170   0.667
1311        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1312        UA     100
            *
            * COMBINE  RN11JS, RN11H AND N11G AT 98TH AVE
            *
```



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

1313        KK   CN11G
1314        HC       3
            *

1315        KK   RN11G
1316        KM  ROUTE FLOW SOUTH TO CN11FB FROM CN11G
1317        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1318        KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1319        KM  ADJACENT TO 98TH AVE ON THE WEST SIDE
1320        RS       4    FLOW       0
1321        RC     .03     .03     .03    2500    .002
1322        RX       0      12      24      36      62      68      72      80
1323        RY       6       4       2       0       0       2       4       6
            *

1324        KK   N11DA   BASIN
1325        KM  SUB-BASIN N11DA CREATED BY CVL 7/04
1326        BA   0.256
1327        LG    0.25    0.25    4.60    0.39      30
1328        UC   0.998   0.672
1329        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1330        UA     100
            *
            * DOVE VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
```

```
                    * STORAGE MODIFIED PER CITY OF PEORIA TO DISCHARGE UP TO 200CFS WEST
                    * TOTAL DETENTION/RETENTION VOLUME = 18 AC-FT, 10 AC-FT MODELED AS RETENTION
                    * 8 AC-FT MODELED AS ON-LINE DETENTION BASIN ON NEC OF RGL & 95TH
                    *

1331                KK  LN11DA
1332                DT  LDAOUT     8.0
1333                DI       0     100    1000   10000
1334                DQ       0     100    1000   10000
                    *

1335                KK  SN11DA
1336                KM  2-8'x3' BOX CULVERTS TO TAKE FLOW TO WEST
1337                KM  THE WEST + EAST DETENTION BASIN WERE COMBINED WITH 1-18"RCP TO SOUTH
1338                RS       1    STOR       0
1339                SV     0.0     .06     0.16     0.35     1.91     5.62    10.58    16.46
1340                SE    1257    1258     1259     1260     1261     1262     1263     1264
1341                SQ       0       5        9       50       84      113      140      205
                    *

1342                KK  N11DAW
1343                KM  SPLIT THE FLOW BETWEEN BOX AND PIPE - Pipe Flow to South
1344                DT  D11DAS
1345                DI       0       5        9       50       84      113      140      205
1346                DQ       0       5        9       15       18       20       22       23
                    *
1                                                HEC-1 INPUT                                                    PAGE 41

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

1347                KK  RN11DA
1348                KM  ROUTE FLOW WEST TO CN11FB FROM N11DA
1349                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1350                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1351                KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1352                RS       5    FLOW       0
1353                RC     .03     .03      .03     2000     .001
1354                RX       0       6       18       30       35       41       47       50
1355                RY       5       4        2        0        0        2        4        5
                    *

1356                KK   N11FB   BASIN
1357                KM  SUB-BASIN N11FB
1358                BA   0.121
1359                LG    0.24    0.26     4.40     0.45       30
1360                UC   0.945   0.910
1361                UA       0     5.0     16.0     30.0     65.0     77.0     84.0     90.0     94.0     97.0
1362                UA     100
                    *

1363                KK  LN11FB
1364                KM  STORAGE ROUTING LN11FB
1365                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1366                DT  LN1FBD    10.6
1367                DI       0     100    1000   10000
1368                DQ       0     100    1000   10000
                    *

1369                KK  CN11FB
1370                KM  COMBINE LN11FB and RN11DA
1371                HC       2
                    *
```



```
1372                KK  C98RGL
1373                KM  COMBINE CN11FB AND RN11G AT WEST 98TH AVE AND RGL
1374                HC       2
                    *

1375                KK  RN11FB
1376                KM  ROUTE FLOW WEST TO CN11FA FROM CN11FB
1377                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1378                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1379                KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1380                RS       2    FLOW       0
1381                RC     .03     .03      .03     1100     .001
1382                RX       0      12       24       36       62       68       72       80
1383                RY       8       4        2        0        0        2        4        8
                    *
1                                                HEC-1 INPUT                                                    PAGE 42

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

1384                KK  DRA09K
1385                KM  DIVERSION RECOVER DA09K
1386                KM  RECOVER DIVERTED FLOW FROM A09K
1387                DR   A09KI
                    *

1388                KK  RA09KS
1389                KM  ROUTE FLOW SOUTH TO CN11FA
1390                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1391                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1392                KM  ADJACENT TO THE COMMERCIAL PROPERTY ON THE EAST SIDE
1393                RS       5    FLOW       0
1394                RC     .03     .03      .03     2700     .002
1395                RX       0      12       24       26       52       58       64       70
1396                RY       6       4        2        0        0        2        4        6
                    *

1397                KK   N11FA   BASIN
1398                BA   0.180
1399                LG    0.22    0.26     4.40     0.46       34
1400                UC   0.925   0.755
1401                UA       0     5.0     16.0     30.0     65.0     77.0     84.0     90.0     94.0     97.0
1402                UA     100
                    *

1403                KK  LN11FA
1404                KM  STORAGE ROUTING LN11FA
1405                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1406                DT  LN1FAD      7.7
1407                DI       0     100    1000   10000
1408                DQ       0     100    1000   10000
                    *

1409                KK   A09GA   BASIN
1410                BA   0.074
1411                LG    0.10    0.25     4.35     0.56       80
1412                UC   0.346   0.202
1413                UA       0     5.0     16.0     30.0     65.0     77.0     84.0     90.0     94.0     97.0
1414                UA     100
                    *

1415                KK  LA09GA
1416                KM  STORAGE ROUTING LA09GA
1417                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
```

```
1418          DT  L09GAD     5.9
1419          DI       0     100    1000   10000
1420          DQ       0     100    1000   10000
              *
```



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

1421          KK  CN11FA
1422          KM  COMBINE RA09KS,LN11FA,LA09GA AND RN11FB
1423          HC       4
              *

1424          KK  RN11FA
1425          KM  ROUTE FLOW WEST TO CA09G FROM CN11FA
1426          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1427          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1428          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1429          RS       2    FLOW       0
1430          RC     .03     .03     .03     800    .001
1431          RX       0       6      12      18      52      58      64      70
1432          RY       8       4       2       0       0       2       4       8
              *

1433          KK   A09GB   BASIN
1434          KM  SUB-BASIN A09GB
1435          BA   0.051
1436          LG    0.23    0.25    4.30    0.49      35
1437          UC   1.497   1.958
1438          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1439          UA     100
              *

1440          KK  LA09GB
1441          KM  STORAGE ROUTING LA09GB
1442          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1443          DT  L09GBD     2.8
1444          DI       0     100    1000   10000
1445          DQ       0     100    1000   10000
              *

1446          KK   CA09G
1447          KM  COMBINE CA09GA and A09GB
1448          HC       2
              *
              * DIVERSION TO SOUTH ALONG 101ST AVE, MAXIMUM 150 CFS PER CITY

1449          KK   DA09G
1450          DT   A09GI
1451          DI       0      50     100     300     750    1200    2000
1452          DQ       0      10      20      60     150     150     150
              *

1453          KK  RA09GW
1454          KM  ROUTE FLOW WEST TO CX8 FROM CA09G
1455          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1456          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1457          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1458          RS       1    FLOW       0
1459          RC     .03     .03     .03     900    .001
1460          RX       0       6      12      18      52      58      64      70
1461          RY       8       4       2       0       0       2       4       8
              *
```



```
              * *** COMBINE  RX7S AND RA09GW ***********************************************
              *
```



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

1462          KK     CX8
1463          HC       2
              *
              * ROUTE RX8W IS 2300 FT WITH A SLOPE OF .001
              * CROSS SECTION IS THE NEW CHANNEL ALONG ROSE GARDEN LANE
              *

1464          KK    RX8W
1465          KM  ROUTE FLOW WEST TO CA09H1 FROM CX8
1466          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1467          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1468          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1469          RS       4    FLOW       0
1470          RC     .03     .03     .03    2300    .001
1471          RX       0      12      24      36      62      68      74      80
1472          RY       8       4       2       0       0       2       4       8
              *

1473          KK    A09H   BASIN
1474          KM  SUB-BASIN A09H
1475          BA   0.237
1476          LG    0.24    0.25    4.55    0.41      31
1477          UC   1.196   1.050
1478          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1479          UA     100
              *

1480          KK   LA09H
1481          KM  STORAGE ROUTING LA09H
1482          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1483          DT  LA09HD    12.6
1484          DI       0     100    1000   10000
1485          DQ       0     100    1000   10000
              *

1486          KK  CA09H1
1487          KM  Combine flows from CX8 and A09H
1488          HC       2
              *

1489          KK    A09J   BASIN
1490          KM  SUB-BASIN A09J
1491          BA   0.168
1492          LG    0.25    0.25    4.35    0.46      30
1493          UC   0.956   0.839
1494          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1495          UA     100
              *
              * *** STORAGE ROUTING LA09J ***************************************************
              * *** FUTURE DEVELOPMENT STORAGE (ACCOUNTED) ****************************
              *
```



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

1496          KK   LA09J
```

```
1497        DT  LA09JD     7.7
1498        DI       0     100    1000   10000
1499        DQ       0     100    1000   10000
            *
            * *** DIVERSION DA09J ********************************************************
            * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ****************************
            * 100% Flows to South based on the report

1500        KK   DA09J
1501        DT   A09JI
1502        DI       0      10      30      50     100     500    1000    2000
1503        DQ       0       0       0       0       0       0       0       0
            *
            * *** ROUTE FLOW TO CA09H   *************************
            *

1504        KK  RA09JS
1505        RS      12    FLOW       0
1506        RC     .04     .04     .04    2800  .00350
1507        RX       0     100     200     225     245     270     370     470
1508        RY       8       7       6       0       0       6       7       8
            *

1509        KK   CA09H
1510        KM  COMBINE CA09H1 and RA09JS
1511        HC       2
            *
            * ROUTE FLOW TO CX10 FROM CA09H
            *

1512        KK   RA09H
1513        RS       1    FLOW       0
1514        RC     .03     .03     .03     850    .005
1515        RX     100     118     126     150     200     224     232     250
1516        RY      10       8       6       0       0       6       8      10
            *
            * *** RECOVER DIVERTED FLOW FROM A09QI*************************************
            *

1517        KK  BA09QI
1518        DR   A09QI
            *
            * *** ROUTE RA09QS ************************************************************
            *
            * ROUTE RA09QS IS 1655 FT WITH A SLOPE OF .0073
            * CROSS SECTION IS A MEDIUM NATURAL WASH
            * *** ROUTE FLOW TO CA09M FROM CA09Q  *************************
            *
```



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

1519        KK  RA09QS
1520        RS       6    FLOW       0
1521        RC    0.05     .06     .05    1655  0.0073
1522        RX       0      50     250     350     360     420     620     720
1523        RY      10       8       6       2       0       6       8      10
            *

1524        KK    A09M   BASIN
1525        KM  SUB-BASIN A09M
1526        BA   0.249
1527        LG    0.28    0.28    4.45    0.42      22
```



```
1528        UC   0.935   0.728
1529        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1530        UA     100
            *
            * *** STORAGE ROUTING LA09M ***********************************************
            * *** IRONWOOD RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) ****************
            *

1531        KK   LA09M
1532        DT  LA09MD     6.9
1533        DI       0     100    1000   10000
1534        DQ       0     100    1000   10000
            *
            * *** COMBINE  CA09Q AND A09M ***************************************************
            *

1535        KK   CA09M
1536        HC       2
            *
            * ROUTE RA09M IS 1102 FT WITH A SLOPE OF .0064
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09N FROM CA09M  *************************
            *

1537        KK   RA09M
1538        RS       2    FLOW       0
1539        RC    0.05    0.04     .05    1102  0.0064
1540        RX       0       1      21      41      51      71     101     102
1541        RY      10       4       0       4       5       6       6      10
            *

1542        KK    A09N   BASIN
1543        KM  SUB-BASIN A09N
1544        BA   0.110
1545        LG    0.27    0.27    5.80    0.22      25
1546        UC   0.834   0.679
1547        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1548        UA     100
            *
            * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
            *
```



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

1549        KK   CA09N
1550        HC       2
            *
            * *** STORAGE ROUTING LA09N ***********************************************
            * *** ALTA VISTA RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) **************
            *

1551        KK   LA09N
1552        RS       1    STOR       0
1553        SV     0.0    2.30    4.67    7.11    9.63   12.23   14.90   17.65   20.48
1554        SE  1250.0  1250.5  1251.0  1251.5  1252.0  1252.5  1253.0  1253.5  1254.0
1555        SQ       0     9.3    31.4    66.0   114.1   160.1   226.2   208.5   475.0
            *
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09L FROM CA09N  *************************
            *

1556        KK   RA09N
```

```
1557          RS      15    FLOW       0
1558          RC   0.025    0.02   0.025    2382  0.0040
1559          RX       0       1       7      11      17      21      29     100
1560          RY       5       4       2       0       0       2     3.0       5
              *
              * *** RECOVER DIVERTED FLOW FROM CA09J ****************************************
              *

1561          KK  DRA09J
1562          DR   A09JI
              *
              * ROUTE RA09JW IS 1749 FT WITH A SLOPE OF .0063
              * CROSS SECTION IS A CHANNEL ON THE WEST SIDE OF A ROAD
              * *** ROUTE FLOW TO CA09L FROM CA09J  *************************
              *

1563          KK  RA09JW
1564          RS       1    FLOW       0
1565          RC    0.04    0.03    0.04    1749  0.0063
1566          RX       0       1      21      31      41      51      81     281
1567          RY      14       6       6       0       0       6       6       8
              *

1568          KK    A09L   BASIN
1569          KM  SUB-BASIN A09L
1570          BA   0.136
1571          LG    0.23    0.26    4.90    0.32      26
1572          UC   0.978   0.827
1573          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1574          UA     100
              *
              * *** COMBINE BASIN A09L, RA09N, AND RA09JW   **********************************
              *
```



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

1575          KK   CA09L
1576          HC       3
              *
              * LA09L is an Onlin Detention Basin, NOT Retention Basin
              *

1577          KK   LA09L
1578          RS       1    STOR       0
1579          SV     0.0    0.57    1.17    1.82    2.50    3.22    3.98    4.78    5.63    6.52
1580          SE     0.0     0.5     1.0     1.5     2.0     2.5     3.0     3.5     4.0     5.5
1581          SQ       0    10.0    30.0    52.0    80.0   110.0   140.0   155.0   180.0     600
              *
              * ROUTE RA09LS IS 2615 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS A NEW CHANNEL ALONG THE EAST SIDE OF THE ROAD
              * *** ROUTE FLOW TO CA99W FROM CA09L  *************************
              *

1582          KK  RA09LS
1583          RS       3    FLOW       0
1584          RC   0.025     .02   0.025    2615  0.0040
1585          RX       0       1       6      12      19      25      29     100
1586          RY       6       5       4       0       0       4       5       6
              *

1587          KK   A09IH   BASIN
1588          KM   Subbasin for Rose Garden and Desert Star Areas
```



```
1589          KM   SUB-BASIN A09IH
1590          BA   0.091
1591          LG    0.25    0.26    4.60    0.39      27
1592          UC   0.770   0.750
1593          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1594          UA     100
              *
              * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
              *

1595          KK  CA09IH
1596          HC       2
              *
              * Onlin Detention Basin (Box Culvert Outlet)
              *

1597          KK  LA09IH
1598          RS       1    STOR       0
1599          SV     0.0    1.12    2.29    3.52    4.79    6.12    7.51    8.95   10.45   12.01
1600          SE  1237.0  1237.5  1238.0  1238.5  1239.0  1239.5  1240.0  1240.5  1241.0  1242.5
1601          SQ       0    10.0    30.0    52.0    80.0   112.0   145.0   183.0   220.0   600.0
              *
```



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

1602          KK    A09I   BASIN
1603          KM  SUB-BASIN A09I
1604          BA   0.126
1605          LG    0.25    0.20    6.60    0.17      29
1606          UC   0.977   0.913
1607          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1608          UA     100
              *
              * *** ROSE GARDEN RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED)  ************
              *

1609          KK   LA09I
1610          DT  LA09IO     5.4
1611          DI       0     100    1000   10000
1612          DQ       0     100    1000   10000
              *
              * *** COMBINE  RA09IW AND RA09LS ***********************************************
              *

1613          KK    CX10
1614          HC       3
              *
              * ROUTE FLOW TO CA09F FROM CA09G
              *

1615          KK    RX10
1616          RS       5    FLOW       0
1617          RC    0.03    0.03    0.03    4470    .005
1618          RX     100     118     126     150     200     224     232     250
1619          RY      10       8       6       0       0       6       8      10
              *

1620          KK    A99V   BASIN
1621          KM  SUB-BASIN A99V
1622          BA   0.207
1623          LG    0.35    0.40    6.00    0.18       1
1624          UC   0.824   0.601
```

```
1625          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1626          UA     100
              *
              * *** COMBINE BASIN A99V AND RX11W  ***********************************
              *

1627          KK   CA99V
1628          HC       2
              *

1629          KK     A10   BASIN
1630          KM  SUB-BASIN A10
1631          BA   0.214
1632          LG    0.34    0.34    4.65    0.33       2
1633          UC   0.639   0.311
1634          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1635          UA     100
              *
              *
```



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

1636          KK    A99W   BASIN
1637          KM  SUB-BASIN A99W
1638          BA   0.215
1639          LG    0.27    0.29    6.40    0.17      20
1640          UC   1.104   0.685
1641          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1642          UA     100
              *
              * *** STORAGE ROUTING LA99W ***********************************************
              * *** DEER VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
              *

1643          KK   LA99W
1644          DT  LA99WD     6.7
1645          DI       0     100    1000   10000
1646          DQ       0     100    1000   10000
              *
              * Dummy Combination at AFR and Rose Garden Lane.
              *

1647          KK    AFR3
1648          HC       4
              *
              * *** RECOVER DIVERTED FLOW FROM CA09G ***************************************
              *

1649          KK  DRA09G
1650          DR   A09GI
              *
              * ROUTE RA09GS IS 3990 FT WITH A SLOPE OF .0015
              * CROSS SECTION IS A MEDIUM ROADSIDE CHANNEL
              * ROUTE FLOW TO CA09F FROM CA09G
              *

1651          KK  RA09GS
1652          RS      13    FLOW       0
1653          RC    0.04    0.04    0.04    3990   .0015
1654          RX       0     200     220     240     260     280     320     520
1655          RY       6       4       0       0       3       4       4       6
              *
```



```
1656          KK    A09F   BASIN
1657          KM  SUB-BASIN A09F
1658          BA   0.365
1659          LG    0.21    0.27    5.30    0.28      35
1660          UC   1.036   0.628
1661          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1662          UA     100
              *
              * *** STORAGE ROUTING LA09F ***********************************************
              * *** PARKRIDGE ESTATES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ***************
              *
```



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

1663          KK   LA09F
1664          DT  LA09FD    13.6
1665          DI       0     100    1000   10000
1666          DQ       0     100    1000   10000
              *
              * *** COMBINE  CA09G, CA09H, AND A09F ****************************************
              *

1667          KK   CA09F
1668          HC       2
              *
              * *** DIVERTED  MAIN (WEST), DIVERTED (SOUTH)  ****************************
              * BEARDSLEY ROAD CHANNEL TO THE WEST. EXCESS FLOW TO THE SOUTH.
              *

1669          KK   DA09F
1670          DT   A09FI
1671          DI       0      10      30      50     100     500     700    1000
1672          DQ       0      .2      .3      .4      .5      80     250     500
              *
              * ******************************************************************************
              * *********************   BEARDSLEY RD DRAINAGE    ******************************
              * ******************************************************************************
              *
              * ROUTE RA09FW IS 3031 FT WITH A SLOPE OF .002
              * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
              *
              * *** ROUTE FLOW TO CA09E FROM CA09F  **************************
              *

1673          KK  RA09FW
1674          RS       9    FLOW       0
1675          RC     .03    .025     .03    3031   0.002
1676          RX       0       1      16      36      51     123     148     648
1677          RY      16       8       0       0       8       8       9      11
              *

1678          KK    A09E   BASIN
1679          KM  SUB-BASIN A09E
1680          BA   0.147
1681          LG    0.22    0.24    4.70    0.35      34
1682          UC   0.968   0.908
1683          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1684          UA     100
              *
              * *** STORAGE ROUTING LA09E ***********************************************
              * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ******************
```

```
                    *
1                                   HEC-1 INPUT                                                    PAGE 52

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

1685          KK   LA09E
1686          DT  LA09ED     8.2
1687          DI       0     100    1000   10000
1688          DQ       0     100    1000   10000
                    *
                    * *** COMBINE LA09E AND A99E ****************************************
                    *

1689          KK   CA09E
1690          HC       2
                    *
                    * ROUTE RA09E IS 2700 FT WITH A SLOPE OF .0041
                    * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
                    *
                    * ROUTE FLOW TO CA09C FROM CA09E
                    *

1691          KK   RA09E
1692          RS       3    FLOW       0
1693          RC    0.04    0.03    0.04    2700   .0041
1694          RX       0       1      16      36      51     123     148     648
1695          RY      16       8       0       0       8       8       9      11
                    *

1696          KK    A09D   BASIN
1697          KM  SUB-BASIN A09D
1698          BA   0.254
1699          LG    0.23    0.20    6.60    0.16      31
1700          UC   0.604   0.239
1701          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1702          UA     100
                    *
                    * *** STORAGE ROUTING LA09D ***********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
                    *

1703          KK   LA09D
1704          DT  LA09DD    15.3
1705          DI       0     100    1000   10000
1706          DQ       0     100    1000   10000
                    *
                    * *** COMBINE LA09D, AND RA09EW *************************
                    *

1707          KK  CA09C*
1708          HC       2
                    *
                    * ROUTE RA09C* IS 841 FT WITH A SLOPE OF .0083
                    * CROSS SECTION IS BEARDSLEY ROAD CHANNEL (MEASURED)
                    * *** ROUTE FLOW TO CA09C FROM CA09C*   **************************
                    *
1                                   HEC-1 INPUT                                                    PAGE 53

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

1709          KK  RA09C*
1710          RS       1    FLOW       0
```



```
1711          RC    0.04    0.03    0.04     841   .0083
1712          RX       0      51      61      71      81     111     151     651
1713          RY       9       8       0       0       8       9       9      10
                    *

1714          KK    A09C   BASIN
1715          KM  SUB-BASIN A09C
1716          BA   0.073
1717          LG    0.35    0.32    4.50    0.38       4
1718          UC   0.789   0.749
1719          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1720          UA     100
                    *
                    * *** COMBINE BASIN A09C AND RA09C*   **********************************
                    *

1721          KK   CA09C
1722          HC       2
                    *
                    * ROUTE RA09C IS 1978 FT WITH A SLOPE OF .0056
                    * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
                    *

1723          KK   RA09C
1724          RS       3    FLOW      -1
1725          RC    0.04    0.04    0.04    1978  0.0056
1726          RX       0     100     120     130     150     180     205     705
1727          RY      14       8       0       0       8       8       9      10
                    *

1728          KK    A09B   BASIN
1729          KM  SUB-BASIN A09B
1730          BA   0.041
1731          LG    0.12    0.25    4.10    0.68      71
1732          UC   0.268   0.175
1733          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1734          UA     100
                    *
                    * ROUTE RA09B IS 2497 FT WITH A SLOPE OF .0012
                    * CROSS SECTION IS A SMALL NATURAL CHANNEL
                    * *** ROUTE FLOW TO CA09A FROM CA09B  **************************
                    *

1735          KK   RA09B
1736          RS      14    FLOW       0
1737          RC    0.05     .06     .05    2497   .0012
1738          RX       0     350     450     480     482     510     610     910
1739          RY       7       6       5       1       0       5       6       7
                    *
1                                   HEC-1 INPUT                                                    PAGE 54

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

1740          KK    A09A   BASIN
1741          KM  SUB-BASIN A09A
1742          BA   0.084
1743          LG    0.29    0.15    3.74    0.80      38
1744          UC   1.036   0.950
1745          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1746          UA     100
                    *
                    * *** Combine  CA09C, A09B, AND A09A ****************************************
                    *
```

```
1747          KK   CA09A
1748          HC       3
              *
              * THIS FLOW IS DIVERTED. THERE IS TWO 36" CMP THAT CARRIES
              * FLOW TO THE WEST, AND THE REST FLOWS SOUTH.
              *

1749          KK  DA09AO
1750          DT   A09AI
1751          DI       0      70     140     400     600     800    1000    3000    5000
1752          DQ       0     0.2     0.3     260     460     660     860    2860    4860
              *
              * ROUTE RA09AW IS 5898 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A LARGE NATURAL WASH
              * *** ROUTE THE DIVERTED FLOW TO THE WEST AND SOUTH TO CA09 ********************
              *

1753          KK  RA09AW
1754          RS      15    FLOW       0
1755          RC    0.05     .06     .05    5898  0.0017
1756          RX       0      50     250     310     360     420     620     720
1757          RY      10       8       6       0       0       6       8      10
              *

1758          KK    A99T   BASIN
1759          KM  SUB-BASIN A99T
1760          BA   0.030
1761          LG    0.20    0.30    2.79    1.39      42
1762          UC   0.262   0.074
1763          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1764          UA     100
              *
              * *** STORAGE ROUTING LA99T ********************************************
              * *** GRAVEL PIT STORAGE (ACCOUNTED) ************************************
              *

1765          KK   LA99T
1766          DT  LA99TD    0.64
1767          DI       0     100    1000   10000
1768          DQ       0     100    1000   10000
              *
              * ROUTE RA99T IS 886 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS A MEDIUM NATURAL WASH
              * *** ROUTE FLOW TO CA09 FROM CA99T   **************************
              *
```



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

1769          KK   RA99T
1770          RS       5    FLOW       0
1771          RC    0.05     .06     .05     886  0.0023
1772          RX       0      50     250     350     360     420     620     720
1773          RY      10       8       6       2       0       6       8      10
              *

1774          KK     A09   BASIN
1775          KM  SUB-BASIN A09
1776          BA   0.176
1777          LG    0.24    0.31    3.58    0.68      22
1778          UC   0.750   0.320
1779          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1780          UA     100
              *
              * COMBINE RA99T, CA09, AND RA09AW
              *

1781          KK    CA09
1782          HC       3
              *

1783          KK    A99U   BASIN
1784          KM  SUB-BASIN A99U
1785          BA   0.070
1786          LG    0.25    0.30    3.71    0.66      29
1787          UC   0.605   0.615
1788          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1789          UA     100
              *
              * COMBINE CA09, A99U, AND AFR3 at AFR & South of Beardsley Rd.
              *

1790          KK    AFR4
1791          HC       3
              *

1792          KK    A99S   BASIN
1793          KM  SUB-BASIN A99S
1794          BA   0.077
1795          LG    0.35    0.35    3.64    0.59       0
1796          UC   1.214   1.245
1797          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1798          UA     100
              *

1799          KK    A08A   BASIN
1800          KM  SUB-BASIN A08A
1801          BA   0.138
1802          LG    0.20    0.30    3.31    0.77      18
1803          UC   1.383   1.534
1804          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1805          UA     100
              *
              * ROUTE RA08A IS 1747 FT WITH A SLOPE OF .0057
              * CROSS SECTION IS A SMALL NATURAL WASH
              * *** ROUTE FLOW TO CA08 FROM CA08A  **************************
              *
```



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

1806          KK   RA08A
1807          RS       5    FLOW       0
1808          RC    0.05    0.05    0.05    1747  0.0057
1809          RX       0     350     450     480     482     510     610     910
1810          RY       7       6       5       1       0       5       6       7
              *

1811          KK    A99R   BASIN
1812          KM  SUB-BASIN A99R
1813          BA   0.037
1814          LG    0.31    0.31    3.55    0.66      12
1815          UC   0.546   0.328
1816          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1817          UA     100
```

```
                    *
                    * ROUTE RA99R IS 2159 FT WITH A SLOPE OF .0032
                    * CROSS SECTION IS A SMALL NATURAL WASH
                    * *** ROUTE FLOW TO CA08 FROM CA99R  **************************
                    *
1818                KK   RA99R
1819                RS       9    FLOW       0
1820                RC    0.05    0.05    0.05    2159   .0032
1821                RX       0     350     450     480     482     510     610     910
1822                RY       7       6       5       1       0       5       6       7
                    *

1823                KK     A08   BASIN
1824                KM  SUB-BASIN A08
1825                BA   0.077
1826                LG    0.30    0.31    3.19    0.88      14
1827                UC   0.417   0.103
1828                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1829                UA     100
                    *
                    * *** COMBINE A99S, A08, RA99R AND RA08A   ******************
                    *

1830                KK    CA08
1831                HC       4
                    *
                    * *** COMBINE HYDROGRAPHS OF CA08 AND AFR4 at AFR and South of Union Hills Dr.
                    *

1832                KK    AFR5
1833                HC       2
                    *

1834                KK    A07G   BASIN
1835                KM  SUB-BASIN A07G
1836                BA   0.258
1837                LG    0.24    0.16    7.60    0.11      32
1838                UC   0.798   0.543
1839                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



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

1840                UA     100
                    *
                    * *** STORAGE ROUTING LA07G ***********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
                    *

1841                KK   LA07G
1842                DT  LA07GD    12.9
1843                DI       0     100    1000   10000
1844                DQ       0     100    1000   10000
                    *
                    * ROUTE RA07G IS 2439 FT WITH A SLOPE OF .0012
                    * CROSS SECTION IS 111TH AVE (MEASURED)
                    * *** ROUTE FLOW FROM CA07G TO CA07E ************************************
                    *

1845                KK   RA07G
1846                RS       6    FLOW       0
1847                RC    0.04     .02    0.04    2439  0.0012
1848                RX       0       1      26      41      71      86     126     576
```



```
1849                RY      12       7       5       1       1       5       6       7
                    *

1850                KK    A07F   BASIN
1851                KM  SUB-BASIN A07F
1852                BA   0.233
1853                LG    0.21    0.27    4.90    0.32      26
1854                UC   1.220   1.192
1855                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1856                UA     100
                    *
                    * ROUTE RA07F IS 2619 FT WITH A SLOPE OF .0042
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07F TO CA07E ************************************
                    *

1857                KK   RA07F
1858                RS       3    FLOW       0
1859                RC    0.03    0.02    0.03    2619  0.0042
1860                RX       0       1      13      23      53      83     108     109
1861                RY      14       6       0       0       6       6       7      15
                    *

1862                KK    A07E   BASIN
1863                KM  SUB-BASIN A07E
1864                BA   0.227
1865                LG    0.23    0.15    7.60    0.11      49
1866                UC   0.696   0.433
1867                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1868                UA     100
                    *
                    * *** COMBINE BASIN A07E, RA07F, AND RA07G  ****************************
                    *
```



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

1869                KK   CA07E
1870                HC       3
                    *
                    * ROUTE RA07E IS 1771 FT WITH A SLOPE OF .004
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07E TO CA07C ************************************
                    *

1871                KK   RA07E
1872                RS       3    FLOW       0
1873                RC    0.03    0.03    0.03    1771   0.004
1874                RX       0     100     112     122     134     154     189     689
1875                RY       8       6       0       0       6       7       7       9
                    *

1876                KK    A07C   BASIN
1877                KM  SUB-BASIN A07C
1878                BA   0.175
1879                LG    0.34    0.31    4.90    0.30       5
1880                UC   0.923   0.648
1881                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1882                UA     100
                    *
                    * *** COMBINE BASIN A07C AND RA07E ************************************
                    *
```

```
1883        KK   CA07C
1884        HC       2
            *
            * ROUTE RA07C IS 1051 FT WITH A SLOPE OF .0067
            * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
            * *** ROUTE FLOW FROM CA07C TO CA07D ***********************************
            *

1885        KK   RA07C
1886        RS       1    FLOW       0
1887        RC    0.03    0.03    0.03    1051  0.0067
1888        RX       0      50      62      72      84     104     139     640
1889        RY       9       6       0       0       6       7       7       9
            *

1890        KK    A07H   BASIN
1891        KM  SUB-BASIN A07H
1892        BA   0.093
1893        LG    0.23    0.21    4.70    0.44      47
1894        UC   0.423   0.211
1895        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1896        UA     100
            *
            * ROUTE RA07H IS 2386 FT WITH A SLOPE OF .0461
            * CROSS SECTION IS THE FARM FIELDS IN THE AGUA FRIA RIVER (MEASURED)
            * *** ROUTE FLOW FROM CA07H TO CA07D ***********************************
            *
```

1 HEC-1 INPUT PAGE 59

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

1897        KK   RA07H
1898        RS       3    FLOW       0
1899        RC    0.03    0.03    0.03    2386  0.0461
1900        RX       0      14     125     250     500     800    1000    1014
1901        RY       7       0       0       0       0       0       0       7
            *
            * *** RECOVER DIVERTED FLOW FROM A09AI ***************************************
            *

1902        KK  DA09AI
1903        DR   A09AI
            *

1904        KK  RA09AI
1905        RS      12    FLOW       0
1906        RC    0.03    0.03    0.03    3000   0.002
1907        RX       0      50     100     150     200     250     300     500
1908        RY       7       6       5       5       0       0       5       6
            *

1909        KK    A08B   BASIN
1910        KM  SUB-BASIN A08B
1911        BA   0.099
1912        LG    0.19    0.27    3.74    0.66      35
1913        UC   0.769   0.536
1914        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1915        UA     100
            *
            * *** COMBINE BASIN A09AI AND R80BE ************************************
            *

1916        KK   CA08B
```



```
1917        HC       2
            *
            * ROUTE RA08B IS 2925 FT WITH A SLOPE OF .001
            * CROSS SECTION IS 115TH AVE (MEASURED)
            * *** ROUTE FLOW FROM CA08B TO CA07D ***********************************
            *

1918        KK   RA08B
1919        RS      12    FLOW       0
1920        RC    0.03    0.03    0.03    2925   0.001
1921        RX       0      50     100     150     200     250     300     500
1922        RY       7       6       5       5       0       0       5       6
            *

1923        KK    A07D   BASIN
1924        KM  SUB-BASIN A07D
1925        BA   0.229
1926        LG    0.49    0.02    4.10    0.67       1
1927        UC   1.500   1.715
1928        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1929        UA     100
            *
            * *** COMBINE BASIN A07D, RA08B, RA07H, AND RA07C *********************
            *
```

1 HEC-1 INPUT PAGE 60

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

1930        KK   CA07D
1931        HC       4
            *
            * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
            * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
            *

1932        KK   RA07D
1933        RS       6    FLOW       0
1934        RC    0.03    0.03    0.03    4828  0.0017
1935        RX       0     100     112     147     159     179     214     580
1936        RY       8       6       0       0       6       7       7       9
            *

1937        KK    S30D   BASIN
1938        KM  SUB-BASIN S30D
1939        BA   0.131
1940        LG    0.25    0.17    6.80    0.15      30
1941        UC   0.801   0.495
1942        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1943        UA     100
            *
            * ROUTE RS30D IS 6176 FT WITH A SLOPE OF .0023
            * CROSS SECTION IS 99TH AVENUE
            * *** ROUTE S30D THROUGH S30C ******************************************
            *

1944        KK   RS30D
1945        RS      10    FLOW       0
1946        RC     .02     .02     .02    6176  0.0023
1947        RX       0       1      85      95     109     134     239     240
1948        RY      12       6       5       0       0       5       6      12
            *

1949        KK    S30C   BASIN
```

```
1950          KM  SUB-BASIN S30C
1951          BA   0.454
1952          LG   0.23    0.15    7.30    0.13      36
1953          UC   1.108   0.895
1954          UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1955          UA    100
              *
              * RECOVER DIVERTED FLOW FROM A09FI
              *

1956          KK  DA09FI
1957          DR   A09FI
              *
```



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

1958          KK  RA09FI
1959          RS     10    FLOW       0
1960          RC    .02     .02     .02    7000  0.0023
1961          RX      0       1      85      95     109     134     239     240
1962          RY     12       6       5       0       0       5       6      12
              *

1963          KK     XX1
1964          HC       3
              *

1965          KK    S30B   BASIN
1966          KM  SUB-BASIN S30B
1967          BA   0.399
1968          LG   0.19    0.29    5.80    0.21      24
1969          UC   1.280   1.214
1970          UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1971          UA    100
              *
              * *** COMBINE BASIN S30C, S30B, AND RS30D ****************************
              *

1972          KK   CS30B
1973          HC       2
              *
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **********************
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *

1974          KK  DS30BO
1975          DT  DS30BI
1976          DI      1     250     550     750    1000    1500    1750    2000
1977          DQ     .1      .2      .3     200     450     950    1200    1450
              *
              * ROUTE RS30BW IS 5060 FT WITH A SLOPE OF .0008
              * CROSS SECTION IS DEL WEBB BLVD
              * *** ROUTED S30BO THROUGH S30A ****************************************
              *

1978          KK  RS30BW
1979          RS      9    FLOW       0
1980          RC    .02    0.02     .02    5060  0.0008
1981          RX      0       1     100     120     140     155     239     240
1982          RY     12       6       5       0       0       5       6      12
              *
```



```
1983          KK    S30A   BASIN
1984          KM  SUB-BASIN S30A
1985          BA   0.531
1986          LG   0.22    0.21    6.40    0.21      28
1987          UC   1.281   0.883
1988          UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1989          UA    100
              *
              * *** COMBINE BASIN S30A AND RS30B ****************************************
              *
```



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

1990          KK   CS30A
1991          HC       2
              *
              * ********************************************************************
              * ********************************************************************
              * ******** THE FOLLOWING PORTION WAS EXTRACTED FROM THE GLENDALE/PEORIA
              * ******** ADMPU MODEL CREATED BY ENTELLUS, DATED OCTOBER 21, 2000.
              * ******** FILE NAME: 10yr6hr.DAT
              * ********************************************************************
              * ********************************************************************
              *
              * *** DIVERSION DS30AO ************************************************
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **************************
              *
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *
              * DDM   ***** Preserved *****

1992          KK  DS30AO
1993          DT  DS30AI
1994          DI      1     250     550     750    1000    1500    1750    2000
1995          DQ     .1      .2      .3     200     450     950    1200    1450
              *
              * *** ROUTE RS30AW  ***************************************************
              *
              * ROUTE RS30AW IS 4919 FT WITH A SLOPE OF .0043
              * CROSS SECTION IS DEL WEBB BLVD
              *
              * *** ROUTE FLOW FROM CS30A TO CS30 ***********************************
              *
              * DDM   ***** Preserved *****

1996          KK  RS30AW
1997          RS      5    FLOW       0
1998          RC    0.03    0.02    0.03    4919  0.0043
1999          RX      0       1     110     125     140     155     160     161
2000          RY     15       7       7       0       0       7       7      15
              *
              *
              * DDM   ***** Preserved *****

2001          KK     S30   BASIN
2002          KM   SUB-BASIN S30
2003          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
2004          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
2005          KM     L = 1.12  Kb = .040  Adj. Slope =   27.0
2006          BA    .321
```

```
2007          LG    0.22    0.26    4.55    0.43      27
2008          UC   0.871   0.664
2009          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2010          UA     100
              *
              * *** COMBINE BASIN S30 AND RS30A ************************************
              *
              * DDM   ***** Preserved *****
```



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

2011          KK    CS30
2012          HC       2
              *
              * *** ROUTE RS30  ****************************************************
              *
              * ROUTE RS30 IS 691 FT WITH A SLOPE OF .0058
              * CROSS SECTION IS A CHANNEL ALONG BELL RD (MEASURED)
              *
              * *** ROUTE FLOW FROM CS30 TO CA07B ***********************************
              *
              * DDM   ***** Preserved *****

2013          KK    RS30
2014          RS       1    FLOW       0
2015          RC    0.03    0.02    0.03     691  0.0058
2016          RX       0      26     136     197     212     227     242     742
2017          RY       9       8       8       7       0       0       7       9
              *

2018          KK    A07B   BASIN
2019          KM   SUB-BASIN A07B
2020          KM   6-HOUR RAINFALL, PATTERN NO. 1.15 WAS USED TO FIND TC & R FOR THIS BASIN
2021          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
2022          KM     L = 1.58  Kb = .030  Adj. Slope =   41.0
2023          BA    .649
2024          LG    0.16    0.31    4.60    0.34      18
2025          UC   0.808   0.539
2026          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2027          UA     100
              *
              *
              * *** STORAGE ROUTING LA07B ******************************************
              * *** CANYON RIDGE WEST RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
              * DDM   ***** Preserved *****

2028          KK   LA07B
2029          DT  LA07BD    19.2
2030          DI       0     100    1000   10000
2031          DQ       0     100    1000   10000
              *
              *
              * *** COMBINE LA07B, RA07D, AND RS30  **********************************
              *
              * DDM   ***** Preserved *****

2032          KK   CA07B
2033          KO                                 21
2034          HC       3
              *
2035          ZZ
```

1


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

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

  73          CBA
              V
              V
  80         RCBA
              .
              .
  83          .         P28
              .           .
              .           .
  90         CP28............
              .
              .
  95          .-------->    DB28
  93         DT28
              .
              .
  98          .         CBB
              .           V
              .           V
 105          .        RCBB
              .           .
              .           .
 108        CP28a...........
              V
              V
 111         R28a
              .
              .
 114          .         P27
              .           .
              .           .
 123          .           .-------->    DB27
 121          .        DT27
              .           .
              .           .
 126         CP27............
              .
              .
 129          .        P27A
              .           .
              .           .
 138          .           .-------->   DB27a
 136          .       DT27a
              .           .
              .           .
 141          .           .        P27B
              .           .          .
              .           .          .
 150          .           .          .-------->   DB27b
 148          .           .       DT27b
              .           .          .
              .           .          .
 153          .           .          .         CBL
              .           .          .           .
              .           .          .           .
 160         CCBL.....................................
              V
              V
```

```
163        RCBL
               .
               .
168            .         CBK
               .           .
               .           .
175        CCBK............
               V
               V
178        RCBK
               .
               .
181            .         P14
               .           .
               .           .
190            .           .-------->    RB14
188            .       RT14
               .           .
               .           .
193        CP14............
               .
               .
196            .         P15
               .           .
               .           .
205            .           .-------->    DB15
203            .       DT15
               .           .
               .           .
208            .           .         CBJ
               .           .           .
               .           .           .
215        CP15........................
               V
               V
218         R15
               .
               .
221            .         CBH
               .           V
               .           V
228            .       RCBH
               .           .
               .           .
233            .           .       P25S
               .           .           .
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240            .      CP25S............
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               .           .
243        AFR0............
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246            .          E1
               .           V
               .           V
253            .         RE1
               .           .
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256            .           .          E2
               .           .           V
               .           .           V
263            .           .         RE2
               .           .           .
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266            .           .           .         P13
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275            .           .           .           .-------->    DB13
273            .           .           .        DT13
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               .           .           .           .
278            .       CP13........................
               .           V
               .           V
281            .        R13
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284            .           .         P12
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               .           .           .
293            .           .           .-------->    DB12
291            .           .        DT12
               .           .           .
               .           .           .
296            .       CP12............
               .           .
               .           .
299            .           .          E3
               .           .           V
               .           .           V
306            .           .         RE3
               .           .           .
               .           .           .
309            .           .           .         P10
               .           .           .           .
               .           .           .           .
318            .           .           .           .-------->    DB10
316            .           .           .        DT10
               .           .           .           .
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321            .           .        CP10............
               .           .           V
               .           .           V
324            .           .         R10
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327            .           .           .         P11
               .           .           .           .
               .           .           .           .
336            .           .           .           .-------->    DB11
334            .           .           .        DT11
               .           .           .           .
               .           .           .           .
339            .           .        CP11............
               .           .           .
               .           .           .
342            .           .           .          E4
               .           .           .           V
               .           .           .           V
349            .           .           .         RE4
               .           .           .           .
               .           .           .           .
356            .           .           .           .          P9
               .           .           .           .           .
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365            .           .           .           .           .-------->    DB9
363            .           .           .           .        DT9
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368                                                   HV1
375                                  CP9.......................
                                      V
                                      V
378                                  R9
385                                            P8
394                                            .------->    DB8
392                                         DT8
397                                                     P7
406                                                     .------->    DB7
404                                                  DT7
409                                  CP7.......................
                                      V
                                      V
412                                  R7
418                                            P6
427                                            .------->    DB6
425                                         DT6
430                                  CP6............
433                     HPVLY........................
                           A11MA
444                                 .------>  DA11MA
443                        A11MAQ
                              V
                              V
447                        SA11MA
                              V
                              V
454                        RA11MA
459                                A11MB
467                                        .------>  DA11MB
466                                A11MBQ
                                      V
                                      V
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470                                SA11MB
477                                         A11NA
484                                        SA11NA
491                                        RA11NA
496                        CA11MB........................
                              V
                              V
498                        RA11MB
503                                 A11O
                                      V
                                      V
510                                SA11O
                                      V
                                      V
517                                RA11O
522                                         A11KB
                                             V
                                             V
529                                        SA11KB
536                                                        A11KA
                                                            V
                                                            V
543                                                       SA11KA
                                                            V
                                                            V
550                                                       RA11KA
555                                CA11KB........................
                                      V
                                      V
557                                RA11KB
562                                          A11G
                                             V
                                             V
569                                        RA11GN
574                                                        A11KC
                                                            V
                                                            V
581                                                       SA11KC
588                                CA11KC........................
                                      V
                                      V
590                                RA11KC
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595                                  A11J
                                        V
602                                  SA11J
                                        .
609                    CA11J.......................
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611                                 A11L
                                        .
619                                     .-------> DA11L
618                                DA11LQ
                                        V
622                                 RA11L
                                        .
627                                     .      A11I
                                        .         .
635                                     .         .-------> DA11I
634                                     .     DA11IQ
                                        .         .
638                    CA11I.......................
                                        V
                                        V
640                    RA11I
                                        .
645                                 A11EA
                                        V
652                                RA11EA
                                        .
657                                     .      A11EB
                                        .         .
664                   CA11EB.......................
                                        .
666                                    41
                                        V
                                        V
673                                    B41
                                        .
680                                     .         42
                                        .          V
                                        .          V
687                                     .        B42
                                        .         .
694                                    C41............
                                        V
                                        V
696                                   RC41
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701                                     .      A11F
                                        .         .
708                                 CA11F............
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710                    CA11E............
                                        V
                                        V
712                    RA11E
                                        .
717                                 A09U
                                        .
725                                     .-------> A09UI
724                                 DA09U
                                        V
                                        V
728                                RA09UW
                                        .
733                                     .      A09T
                                        .         .
740                                 CA09T............
                                        .
743                                     .-------> A09TI
742                                 DA09T
                                        V
                                        V
746                                RA09TW
                                        .
751                                     .      A11A
                                        .         .
759                                     .         .-------> DA11A
758                                     .     DA11AQ
                                        .         .
762                    CX23.......................
                                        V
                                        V
764                    RX23
                                        .
769                                    S1
                                        .
776                                     .         P2
                                        .         .
785                                     .         .-------> RB2
783                                     .        RT2
                                        .         .
788                     CS1.......................
                                        V
                                        V
791                     RS1
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794          .          .          .          S2
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801          .          .          .          .          S3
             .          .          .          .          .
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808          .          .       CS2.......................
             .          .         V
             .          .         V
811          .          .       RS2
             .          .          .
814          .          .          .          P3
             .          .          .          .
             .          .          .          .
823          .          .          .          .-------->     RB3
821          .          .          .       RT3
             .          .          .          .
             .          .          .          .
826          .          .       CP3............
             .          .          .
             .          .          .
829          .          .          .       P4b
             .          .          .          .
             .          .          .          .
838          .          .          .          .-------->    RB4b
836          .          .          .      RT4b
             .          .          .          .
841          .          .          .          .          S4
             .          .          .          .          .
848          .          .          .          .          .          P1
             .          .          .          .          .          .
857          .          .          .          .          .          .-------->     DB1
855          .          .          .          .          .        DT1
             .          .          .          .          .          .
860          .          .          .          .        CP1............
             .          .          .          .          .
863          .          .          .          .          .        HV2
             .          .          .          .          .          V
870          .          .          .          .          .        RHV2
             .          .          .          .          .          .
875          .          .          .          .          .          .-------->   DBHV2
873          .          .          .          .          .      DTHV2
             .          .          .          .          .          .
878          .          .          .          .          .          .         P4a
             .          .          .          .          .          .          .
887          .          .          .          .          .          .          .-------->    DB4a
885          .          .          .          .          .          .       DT4a
             .          .          .          .          .          .          .
890          .          .      SOUTH.............................................
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893          .          .          .      N11O
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901          .          .          .          .-------->   N11OI
900          .          .          .     DN11O
             .          .          .         V
904          .          .          .     RN11OW
             .          .          .          .
910          .          .          .          .          .<-------   A09TI
909          .          .          .          .     DRA09T
             .          .          .          .         V
911          .          .          .          .     RA09TS
             .          .          .          .          .
916          .          .          .          .          .        A09R
             .          .          .          .          .          .
923          .          .          .     CA09R......................
             .          .          .          .
926          .          .          .          .-------->   A09RI
925          .          .          .     DA09R
             .          .          .         V
929          .          .          .     RA09RW
             .          .          .          .
934          .          .          .          .       A09S
             .          .          .          .          .
942          .          .          .          .          .-------->   DA09S
941          .          .          .          .     DA09SQ
             .          .          .          .          .
945          .          .          .     CA09S............
             .          .          .         V
947          .          .          .     RA09SW
             .          .          .          .
952          .          .          .          .      A09QA
             .          .          .          .          .
959          .          .          .     CA09QA............
             .          .          .          .
962          .          .          .          .-------> A09QAI
961          .          .          .     DA09QA
             .          .          .         V
965          .          .          .     RA09QW
             .          .          .          .
970          .          .          .          .      A99YA
             .          .          .          .          .
977          .          .          .     CA99YA............
             .          .          .         V
979          .          .          .     RA99YA
             .          .          .          .
984          .          .          .          .      A99YB
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 991             .           .      CA99YB.......................
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 993         AFR1.......................
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 996             .           .<-------   A09UI
 995             .      BA09UI
                 .           V
                 .           V
 997             .      RA09US
                 .           .
                 .           .
1002             .           .      N11NB
                 .           .           .
                 .           .           .
1009             .      CN11NB............
                 .           V
                 .           V
1011             .      RN11NW
                 .           .
                 .           .
1017             .           .           .<-------   N11OI
1016             .           .      BN11OI
                 .           .           V
                 .           .           V
1018             .           .      RN11OS
                 .           .           .
                 .           .           .
1023             .           .           .       N11M
                 .           .           .           .
                 .           .           .           .
1030             .      CN11M........................
                 .           .
                 .           .
1033             .           .------->   N11MI
1032             .      DN11M
                 .           V
                 .           V
1036             .      RN11MS
                 .           .
                 .           .
1041             .           .       N11J
                 .           .           .
                 .           .           .
1049             .           .           .------->  LN11JD
1048             .           .      LN11J
                 .           .           .
                 .           .           .
1052             .      CN11J............
                 .           .
                 .           .
1055             .           .------->   N11JI
1054             .      DN11J
                 .           V
                 .           V
1058             .      RN11JW
                 .           .
                 .           .
1064             .           .           .<-------   N11MI
1063             .           .      DRN11M
                 .           .           V
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                 .           .           V
1065             .           .      RN11MW
                 .           .           .
                 .           .           .
1070             .        CX4............
                 .           V
                 .           V
1072             .        RX4
                 .           .
                 .           .
1077             .           .       A09O
                 .           .           V
                 .           .           V
1084             .           .      SA09O
                 .           .           .
                 .           .           .
1092             .           .           .           .<-------   A09RI
1091             .           .           .      BA09RI
                 .           .           .           V
                 .           .           .           V
1093             .           .           .      RA09RS
                 .           .           .           .
                 .           .           .           .
1098             .      CA09O........................
                 .           .
                 .           .
1101             .           .------->   A09OI
1100             .      DA09O
                 .           V
                 .           V
1104             .      RA09OW
                 .           .
                 .           .
1109             .           .       A09P
                 .           .           V
                 .           .           V
1116             .           .      SA09P
                 .           .           .
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1123             .      CA09P............
                 .           V
                 .           V
1125             .      RA09P
                 .           .
                 .           .
1131             .           .           .<-------  A09QAI
1130             .           .      BA09QA
                 .           .           V
                 .           .           V
1132             .           .      RA09QB
                 .           .           .
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1137             .           .           .      A09QB
                 .           .           .           .
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1144             .      CA09Q........................
                 .           .
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1147             .           .------->   A09QI
1146             .      DA09Q
                 .           V
                 .           V
1150             .      RA09QW
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1155          .          .        A10A
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1162          .      CA10A...........
              .        V
              .        V
1164          .      RA10A
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1169          .          .        A99X
              .          .          .
1176          .      CA99X...........
              .          .
1178       AFR2...........
              .
1181          .          .<-------   A09OI
1180          .      BA09OI
              .        V
              .        V
1182          .      RA09OS
              .          .
1187          .          .        A09K
              .          .          .
1199          .          .          .-------->   A09KI
1194          .          .      DA09K
              .          .          .
1202          .        CX7...........
              .        V
              .        V
1205          .      RX7S
              .          .
1214          .          .      N11NA
              .          .        V
              .          .        V
1221          .          .     RN11NA
              .          .          .
1226          .          .          .       N11NC
              .          .          .         .
1233          .          .     CN11NC...........
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1237          .          .          .-------->   N11NP
1235          .          .     DN11NC
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              .          .        V
1240          .          .     RN11NC
              .          .          .
1246          .          .          .       N11ND
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1253          .          .          .         .        N11K
              .          .          .         .          .
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1260          .          .     CN11K........................
              .          .          .
1264          .          .          .-------->   N11KP
1263          .          .     DN11KS
              .          .        V
              .          .        V
1267          .          .      RN11K
              .          .          .
1273          .          .          .-------->     X5I
1272          .          .        DX5
              .          .        V
              .          .        V
1276          .          .       RX5W
              .          .          .
1281          .          .          .        N11H
              .          .          .          .
1288          .          .      CN11H...........
              .          .        V
              .          .        V
1290          .          .      RN11H
              .          .          .
1300          .          .          .          .<-------   N11JI
1299          .          .          .      BN11JI
              .          .          .        V
              .          .          .        V
1301          .          .          .      RN11JS
              .          .          .          .
1306          .          .          .          .        N11G
              .          .          .          .          .
1313          .          .      CN11G........................
              .          .        V
              .          .        V
1315          .          .      RN11G
              .          .          .
1324          .          .          .       N11DA
              .          .          .         .
1332          .          .          .         .-------->  LDAOUT
1331          .          .          .      LN11DA
              .          .          .        V
              .          .          .        V
1335          .          .          .      SN11DA
              .          .          .          .
1344          .          .          .          .-------->  D11DAS
1342          .          .          .      N11DAW
              .          .          .        V
              .          .          .        V
1347          .          .          .      RN11DA
              .          .          .          .
1356          .          .          .          .       N11FB
              .          .          .          .         .
1366          .          .          .          .         .-------->  LN1FBD
1363          .          .          .          .      LN11FB
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1369                                              .   CN11FB.............
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1372                                        C98RGL.............
                                                  V         .
                                                  V         .
1375                                        RN11FB          .
                                                  .         .
                                                  .         .
1387                                              .         .<-------   A09KI
1384                                              .   DRA09K
                                                  .         V
                                                  .         V
1388                                              .   RA09KS
                                                  .         .
                                                  .         .
1397                                              .         .     N11FA
                                                  .         .         .
                                                  .         .         .
1406                                              .         .         .-------> LN1FAD
1403                                              .         .   LN11FA
                                                  .         .         .
                                                  .         .         .
1409                                              .         .         .     A09GA
                                                  .         .         .         .
                                                  .         .         .         .
1418                                              .         .         .         .-------> L09GAD
1415                                              .         .         .   LA09GA
                                                  .         .         .         .
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1421                                        CN11FA.................................
                                                  V         .
                                                  V         .
1424                                        RN11FA          .
                                                  .         .
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1433                                              .     A09GB
                                                  .         .
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1443                                              .         .-------> L09GBD
1440                                              .   LA09GB
                                                  .         .
                                                  .         .
1446                                         CA09G............
                                                  .         .
                                                  .         .
1450                                              .------->   A09GI
1449                                         DA09G          .
                                                  V         .
                                                  V         .
1453                                         RA09GW         .
                                                  .         .
                                                  .         .
1462                                     CX8...........     .
                                          V       .         .
                                          V       .         .
1464                                     RX8W     .         .
                                                  .         .
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1473                                          A09H          .
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1483                                              .-------> LA09HD
1480                                         LA09H          .
                                                  .         .
1486                                     CA09H1...........  .
                                                  .         .
1489                                          A09J          .
                                                  .         .
1497                                              .-------> LA09JD
1496                                         LA09J          .
                                                  .         .
1501                                              .------->   A09JI
1500                                         DA09J          .
                                                  V         .
                                                  V         .
1504                                         RA09JS         .
                                                  .         .
                                                  .         .
1509                                     CA09H...........  .
                                          V       .         .
                                          V       .         .
1512                                     RA09H     .         .
                                                  .         .
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1518                                              .<-------   A09QI
1517                                         BA09QI         .
                                                  V         .
                                                  V         .
1519                                         RA09QS         .
                                                  .         .
                                                  .         .
1524                                              .       A09M
                                                  .         .
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1532                                              .         .-------> LA09MD
1531                                              .     LA09M
                                                  .         .
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1535                                         CA09M...........
                                                  V         .
                                                  V         .
1537                                         RA09M          .
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1542                                              .       A09N
                                                  .         .
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1549                                         CA09N...........
                                                  V         .
                                                  V         .
1551                                         LA09N          .
                                                  V         .
                                                  V         .
1556                                         RA09N          .
                                                  .         .
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1562                                              .         .<-------   A09JI
1561                                              .   DRA09J
                                                  .         V
                                                  .         V
1563                                              .   RA09JW
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1568                                                              .          .        A09L
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1575                                                        CA09L.......................
                                                                  V
                                                                  V
1577                                                        LA09L
                                                                  V
                                                                  V
1582                                                       RA09LS
                                                                  .
1587                                                              .       A09IH
                                                                  .          .
1595                                                       CA09IH............
                                                                  V
                                                                  V
1597                                                       LA09IH
                                                                  .
1602                                                              .        A09I
                                                                  .          .
1610                                                              .          .-------> LA09ID
1609                                                              .       LA09I
                                                                  .          .
1613                                                   CX10........................
                                                          V
                                                          V
1615                                                   RX10
                                                          .
1620                                                          .        A99V
                                                              .          .
1627                                                   CA99V............
                                                          .
1629                                                          .         A10
                                                              .          .
1636                                                          .        A99W
                                                              .          .
1644                                                          .          .-------> LA99WD
1643                                                          .       LA99W
                                                              .          .
1647                                          AFR3.................................
                                                                  .
1650                                                          .<-------   A09GI
1649                                                   DRA09G
                                                          V
                                                          V
1651                                                   RA09GS
                                                          .
1656                                                          .        A09F
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1664                                                          .          .-------> LA09FD
1663                                                          .       LA09F
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1667                                                   CA09F............
                                                          .
1670                                                          .------->   A09FI
1669                                                   DA09F
                                                          V
                                                          V
1673                                                   RA09FW
                                                          .
1678                                                          .        A09E
                                                              .          .
1686                                                          .          .-------> LA09ED
1685                                                          .       LA09E
                                                              .          .
1689                                                   CA09E............
                                                          V
                                                          V
1691                                                   RA09E
                                                          .
1696                                                          .        A09D
                                                              .          .
1704                                                          .          .-------> LA09DD
1703                                                          .       LA09D
                                                              .          .
1707                                                   CA09C*...........
                                                          V
                                                          V
1709                                                   RA09C*
                                                          .
1714                                                          .        A09C
                                                              .          .
1721                                                   CA09C............
                                                          V
                                                          V
1723                                                   RA09C
                                                          .
1728                                                          .        A09B
                                                              V
                                                              V
1735                                                       RA09B
                                                              .
1740                                                          .        A09A
                                                              .          .
1747                                                   CA09A........................
                                                          .
1750                                                          .------->   A09AI
1749                                                   DA09AO
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                                  V
                                  V
1753                        RA09AW
                                  .
1758                              .        A99T
                                  .           .
1766                              .           .-------> LA99TD
1765                              .       LA99T
                                  .           V
                                  .           V
1769                              .       RA99T
                                  .           .
                                  .           .
1774                              .           .        A09
                                  .           .          .
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1781                        CA09.......................
                                  .
1783                              .        A99U
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1790                  AFR4.......................
                                  .
1792                        A99S
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1799                              .        A08A
                                  .           V
                                  .           V
1806                              .       RA08A
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1811                              .           .       A99R
                                  .           .          V
                                  .           .          V
1818                              .           .      RA99R
                                  .           .          .
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1823                              .           .          .        A08
                                  .           .          .          .
                                  .           .          .          .
1830                        CA08....................................
                                  .
1832                  AFR5............
                                  .
1834                        A07G
                                  .
                                  .
1842                              .-------> LA07GD
1841                        LA07G
                                  V
                                  V
1845                        RA07G
                                  .
1850                              .        A07F
                                  .           V
                                  .           V
```



```
1857                              .       RA07F
                                  .           .
1862                              .           .       A07E
                                  .           .          .
1869                        CA07E.......................
                                  V
                                  V
1871                        RA07E
                                  .
1876                              .        A07C
                                  .           .
1883                        CA07C............
                                  V
                                  V
1885                        RA07C
                                  .
1890                              .        A07H
                                  .           V
                                  .           V
1897                              .       RA07H
                                  .           .
1903                              .           ..<-------   A09AI
1902                              .      DA09AI
                                  .           V
                                  .           V
1904                              .      RA09AI
                                  .           .
1909                              .           .        A08B
                                  .           .          .
1916                              .       CA08B............
                                  .           V
                                  .           V
1918                              .      RA08B
                                  .           .
1923                              .           .        A07D
                                  .           .          .
1930                        CA07D....................................
                                  V
                                  V
1932                        RA07D
                                  .
1937                              .        S30D
                                  .           V
                                  .           V
1944                              .       RS30D
                                  .           .
1949                              .           .       S30C
                                  .           .          .
1957                              .           .          ..<-------   A09FI
1956                              .           .      DA09FI
                                  .           .          V
```

```
                                                  V
 1958          .          .          .          .      RA09FI
               .          .          .          .          .
               .          .          .          .          .
 1963          .          .       XX1.......................
               .          .          .
               .          .          .
 1965          .          .          .       S30B
               .          .          .          .
               .          .          .          .
 1972          .          .      CS30B............
               .          .          .
               .          .          .
 1975          .          .          .-------> DS30BI
 1974          .          .      DS30BO
               .          .          V
               .          .          V
 1978          .          .      RS30BW
               .          .          .
               .          .          .
 1983          .          .          .       S30A
               .          .          .          .
               .          .          .          .
 1990          .          .      CS30A............
               .          .          .
               .          .          .
 1993          .          .          .-------> DS30AI
 1992          .          .      DS30AO
               .          .          V
               .          .          V
 1996          .          .      RS30AW
               .          .          .
               .          .          .
 2001          .          .          .        S30
               .          .          .          .
               .          .          .          .
 2011          .          .      CS30............
               .          .          V
               .          .          V
 2013          .          .      RS30
               .          .          .
               .          .          .
 2018          .          .          .       A07B
               .          .          .          .
               .          .          .          .
 2029          .          .          .          .-------> LA07BD
 2028          .          .          .      LA07B
               .          .          .          .
               .          .          .          .
 2032          .       CA07B........................
```

(***) 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   02JUN10  TIME  13:42:16  *                                          *          (916) 756-1104
   *
 *                                      *                                          *
   *
 ****************************************
****************************************
```

```
Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 10 Years
                                                                              **
107th Avenue and Union Hills Drive Design Concept Report                      **
                                                                             **

PROJECT NO.: FCD 2009C036                    G&M: 10388A                     **
                                                                             **

Original HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                  **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions     **
Modified HEC-1 Model: BASE10-6.DAT, Goodwin & Marshall, Inc., May29, 2010    **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions     **
                                                                             **

1) NOAA2 Rainfall Data                                                       **

2) DDMSW V3.5.7 Used                                                         **

                                                                             **

*****************************************************************************
Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 10 Years
                                                                              **
Glendale/Peoria ADMPU Northwest Region Update                                 **
Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                 **
                      REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS              **
Modified HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                  **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions     **
1) NOAA 2 Rainfall Data                                                       **
2) DDMSW MCUHP1 V3.3.2 Used                                                   **
                                                                              **
*****************************************************************************
*******************************************************************************
**                                                                            **
** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS       **
** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                 **
** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005            **
** THIS IS THE PREFERRED ALTERNATIVE MODEL                                   **
** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS             **
** USING LATEST SURVEY DATA.                                                 **
*******************************************************************************
*******************************************************************************
**                                                                            **
**                     Glendale/Peoria ADMP Update                            **
**                                                                            **
*******************************************************************************
*******************************************************************************
PROJECT:                Glendale Peoria ADMP Update
CLIENT:                 Flood Control District of Maricopa County
PREPARED BY:            Entellus, Inc.
PROJECT No:             FCD 99-44              Entellus 310.017
FILE NAME: LEVEL3.DAT             CREATED DATE: JUNE 6, 2001
STORM:                  100-year 6-hour Storm
```

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

   IT          HYDROGRAPH TIME DATA
                     NMIN          2  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       0918  ENDING TIME
                    ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL     .03 HOURS
                      TOTAL TIME BASE   33.30 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

53 JD          INDEX STORM NO. 1
                    STRM        2.03  PRECIPITATION DEPTH
                    TRDA         .01  TRANSPOSITION DRAINAGE AREA

54 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       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                    .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

57 JD          INDEX STORM NO. 2
                    STRM        2.02  PRECIPITATION DEPTH
                    TRDA         .50  TRANSPOSITION DRAINAGE AREA

58 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       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                    .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

61 JD          INDEX STORM NO. 3
                    STRM        1.98  PRECIPITATION DEPTH
                    TRDA        2.80  TRANSPOSITION DRAINAGE AREA

62 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
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .03       .03       .03       .03       .03
                    .03       .03       .03       .03       .03       .03       .03       .03       .03       .03
                    .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .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

65 JD          INDEX STORM NO. 4
                    STRM        1.87  PRECIPITATION DEPTH
                    TRDA       16.00  TRANSPOSITION DRAINAGE AREA

66 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
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .02       .03       .03       .03       .03       .03       .03       .03
                    .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .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

69 JD          INDEX STORM NO. 5
                    STRM        1.65  PRECIPITATION DEPTH
                    TRDA       90.00  TRANSPOSITION DRAINAGE AREA
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 70 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
                      .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                      .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                      .02       .02       .02       .02       .02       .02       .02       .02       .02       .02
                      .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                      .01       .01       .01       .01       .01       .01       .01       .01       .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
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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

             **************
             *            *
 2032 KK     *     CA07B  *
             *            *
             **************

 2033 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       1000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .033  TIME INTERVAL IN HOURS

1
                                                  RUNOFF SUMMARY
                                         FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION        STATION   FLOW    PEAK                                          AREA      STAGE     MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR
          HYDROGRAPH AT
+                            CBA       7.    4.13          1.          0.          0.        .01
          ROUTED TO
+                           RCBA       7.    4.27          1.          0.          0.        .01
          HYDROGRAPH AT
+                            P28      29.    4.17          4.          1.          1.        .03
          2 COMBINED AT
+                           CP28      35.    4.20          5.          1.          1.        .03
```



```
          DIVERSION TO
+                           DB28      35.    4.20          2.          1.          0.        .03
          HYDROGRAPH AT
+                           DT28      30.    4.37          2.          1.          0.        .03
          HYDROGRAPH AT
+                            CBB      17.    4.13          1.          0.          0.        .02
          ROUTED TO
+                           RCBB      17.    4.17          1.          0.          0.        .02
          2 COMBINED AT
+                          CP28a      40.    4.37          4.          1.          1.        .05
          ROUTED TO
+                           R28a      30.    4.60          4.          1.          1.        .05
          HYDROGRAPH AT
+                            P27      52.    4.23          9.          2.          2.        .06
          DIVERSION TO
+                           DB27      50.    4.17          3.          1.          0.        .06
          HYDROGRAPH AT
+                           DT27      52.    4.23          7.          2.          1.        .06
          2 COMBINED AT
+                           CP27      68.    4.53         11.          3.          2.        .12
          HYDROGRAPH AT
+                           P27A       8.    4.10          1.          0.          0.        .01
          DIVERSION TO
+                          DB27a       8.    4.10          0.          0.          0.        .01
          HYDROGRAPH AT
+                          DT27a       7.    4.17          1.          0.          0.        .01
          HYDROGRAPH AT
+                           P27B      11.    4.13          2.          0.          0.        .01
          DIVERSION TO
+                          DB27b      10.    4.07          1.          0.          0.        .01
          HYDROGRAPH AT
+                          DT27b      11.    4.13          1.          0.          0.        .01
          HYDROGRAPH AT
+                            CBL      24.    4.13          3.          1.          1.        .03
          4 COMBINED AT
+                           CCBL      96.    4.30         15.          4.          3.        .16
          ROUTED TO
+                           RCBL     105.    4.33         15.          4.          3.        .16
          HYDROGRAPH AT
+                            CBK      43.    4.23          4.          1.          1.        .05
          2 COMBINED AT
+                           CCBK     140.    4.33         19.          5.          3.        .22
```

+	ROUTED TO	RCBK	136.	4.37	19.	5.	3.	.22
+	HYDROGRAPH AT	P14	5.	4.17	0.	0.	0.	.01
+	DIVERSION TO	RB14	5.	4.17	0.	0.	0.	.01
+	HYDROGRAPH AT	RT14	0.	.00	0.	0.	0.	.01
+	2 COMBINED AT	CP14	136.	4.37	19.	5.	3.	.22
+	HYDROGRAPH AT	P15	1.	4.47	0.	0.	0.	.01
+	DIVERSION TO	DB15	1.	4.47	0.	0.	0.	.01
+	HYDROGRAPH AT	DT15	0.	.00	0.	0.	0.	.01
+	HYDROGRAPH AT	CBJ	11.	4.20	1.	0.	0.	.01
+	3 COMBINED AT	CP15	144.	4.37	20.	5.	4.	.25
+	ROUTED TO	R15	142.	4.40	20.	5.	4.	.25
+	HYDROGRAPH AT	CBH	15.	4.10	1.	0.	0.	.01
+	ROUTED TO	RCBH	13.	4.20	1.	0.	0.	.01
+	HYDROGRAPH AT	P25S	13.	4.27	2.	1.	0.	.03
+	2 COMBINED AT	CP25S	25.	4.23	3.	1.	1.	.04
+	2 COMBINED AT	AFR0	162.	4.40	24.	6.	4.	.29
+	HYDROGRAPH AT	E1	12.	4.13	1.	0.	0.	.01
+	ROUTED TO	RE1	12.	4.23	1.	0.	0.	.01
+	HYDROGRAPH AT	E2	11.	4.17	1.	0.	0.	.02
+	ROUTED TO	RE2	11.	4.20	1.	0.	0.	.02
+	HYDROGRAPH AT	P13	55.	4.13	6.	2.	1.	.06
	DIVERSION TO							

+		DB13	49.	4.07	2.	1.	0.	.06
+	HYDROGRAPH AT	DT13	55.	4.13	4.	1.	1.	.06
+	3 COMBINED AT	CP13	75.	4.17	6.	1.	1.	.09
+	ROUTED TO	R13	74.	4.27	6.	1.	1.	.09
+	HYDROGRAPH AT	P12	29.	4.23	5.	1.	1.	.04
+	DIVERSION TO	DB12	29.	4.23	2.	1.	0.	.04
+	HYDROGRAPH AT	DT12	25.	4.40	2.	1.	0.	.04
+	2 COMBINED AT	CP12	85.	4.40	8.	2.	1.	.13
+	HYDROGRAPH AT	E3	25.	4.60	6.	1.	1.	.08
+	ROUTED TO	RE3	25.	4.67	6.	1.	1.	.08
+	HYDROGRAPH AT	P10	42.	4.20	6.	1.	1.	.05
+	DIVERSION TO	DB10	42.	4.17	2.	1.	0.	.05
+	HYDROGRAPH AT	DT10	42.	4.23	4.	1.	1.	.05
+	2 COMBINED AT	CP10	53.	4.30	9.	2.	2.	.14
+	ROUTED TO	R10	53.	4.43	9.	2.	2.	.14
+	HYDROGRAPH AT	P11	16.	4.43	4.	1.	1.	.04
+	DIVERSION TO	DB11	16.	4.43	2.	1.	0.	.04
+	HYDROGRAPH AT	DT11	13.	4.90	2.	1.	0.	.04
+	2 COMBINED AT	CP11	53.	4.43	11.	3.	2.	.18
+	HYDROGRAPH AT	E4	11.	4.53	3.	1.	0.	.04
+	ROUTED TO	RE4	11.	4.60	3.	1.	0.	.04
+	HYDROGRAPH AT	P9	36.	4.17	5.	1.	1.	.05

+	DIVERSION TO	DB9	35.	4.13	2.	0.	0.	.05
+	HYDROGRAPH AT	DT9	35.	4.20	3.	1.	1.	.05
+	HYDROGRAPH AT	HV1	2.	4.40	1.	0.	0.	.01
+	3 COMBINED AT	CP9	41.	4.20	6.	2.	1.	.09
+	ROUTED TO	R9	41.	4.27	6.	2.	1.	.09
+	HYDROGRAPH AT	P8	6.	4.33	1.	0.	0.	.01
+	DIVERSION TO	DB8	6.	4.33	1.	0.	0.	.01
+	HYDROGRAPH AT	DT8	5.	4.53	1.	0.	0.	.01
+	HYDROGRAPH AT	P7	7.	4.27	1.	0.	0.	.01
+	DIVERSION TO	DB7	7.	4.27	1.	0.	0.	.01
+	HYDROGRAPH AT	DT7	7.	4.43	1.	0.	0.	.01
+	3 COMBINED AT	CP7	43.	4.53	8.	2.	1.	.12
+	ROUTED TO	R7	45.	4.30	8.	2.	1.	.12
+	HYDROGRAPH AT	P6	19.	4.67	7.	2.	1.	.07
+	DIVERSION TO	DB6	19.	4.67	4.	1.	1.	.07
+	HYDROGRAPH AT	DT6	16.	5.23	4.	1.	1.	.07
+	2 COMBINED AT	CP6	45.	4.30	12.	3.	2.	.19
+	3 COMBINED AT	HPVLY	174.	4.40	31.	8.	6.	.50
+	HYDROGRAPH AT	A11MA	106.	4.13	9.	2.	2.	.07
+	DIVERSION TO	DA11MA	106.	4.13	7.	2.	1.	.07
+	HYDROGRAPH AT	A11MAQ	49.	4.37	2.	0.	0.	.07

+	ROUTED TO	SA11MA	12.	4.63	2.	0.	0.	.07
+	ROUTED TO	RA11MA	11.	4.93	2.	0.	0.	.07
+	HYDROGRAPH AT	A11MB	262.	4.17	29.	7.	5.	.19
+	DIVERSION TO	DA11MB	181.	4.00	7.	2.	1.	.19
+	HYDROGRAPH AT	A11MBQ	262.	4.17	22.	5.	4.	.19
+	ROUTED TO	SA11MB	31.	4.80	21.	5.	4.	.19
+	HYDROGRAPH AT	A11NA	93.	4.13	8.	2.	2.	.08
+	ROUTED TO	SA11NA	25.	4.47	8.	2.	2.	.08
+	ROUTED TO	RA11NA	25.	4.77	8.	2.	2.	.08
+	3 COMBINED AT	CA11MB	67.	4.90	31.	8.	6.	.34
+	ROUTED TO	RA11MB	66.	5.23	30.	8.	6.	.34
+	HYDROGRAPH AT	A11O	52.	4.20	6.	2.	1.	.06
+	ROUTED TO	SA11O	27.	4.50	6.	2.	1.	.06
+	ROUTED TO	RA11O	27.	4.83	6.	2.	1.	.06
+	HYDROGRAPH AT	A11KB	103.	4.17	12.	3.	2.	.11
+	ROUTED TO	SA11KB	24.	4.73	12.	3.	2.	.11
+	HYDROGRAPH AT	A11KA	92.	4.13	10.	3.	2.	.08
+	ROUTED TO	SA11KA	24.	4.57	10.	3.	2.	.08
+	ROUTED TO	RA11KA	24.	4.87	10.	3.	2.	.08
+	3 COMBINED AT	CA11KB	75.	4.83	28.	7.	5.	.24
+	ROUTED TO	RA11KB	75.	5.03	28.	7.	5.	.24
	HYDROGRAPH AT							

+	A11G	38.	4.37	6.	2.	1.	.06
+ ROUTED TO	RA11GN	36.	4.60	6.	2.	1.	.06
+ HYDROGRAPH AT	A11KC	123.	4.17	14.	3.	2.	.13
+ ROUTED TO	SA11KC	31.	4.67	13.	3.	2.	.13
+ 3 COMBINED AT	CA11KC	131.	4.80	47.	12.	9.	.44
+ ROUTED TO	RA11KC	131.	4.90	47.	12.	9.	.44
+ HYDROGRAPH AT	A11J	69.	4.50	13.	3.	2.	.11
+ ROUTED TO	SA11J	30.	5.13	13.	3.	2.	.11
+ 3 COMBINED AT	CA11J	208.	5.07	84.	22.	16.	.89
+ HYDROGRAPH AT	A11L	189.	4.40	41.	10.	7.	.26
+ DIVERSION TO	DA11L	189.	4.40	15.	4.	3.	.26
+ HYDROGRAPH AT	DA11LQ	184.	4.50	26.	6.	5.	.26
+ ROUTED TO	RA11L	162.	4.83	26.	6.	5.	.26
+ HYDROGRAPH AT	A11I	155.	4.23	25.	6.	4.	.15
+ DIVERSION TO	DA11I	155.	4.23	24.	6.	4.	.15
+ HYDROGRAPH AT	DA11IQ	15.	5.50	1.	0.	0.	.15
+ 3 COMBINED AT	CA11I	342.	4.93	106.	27.	20.	1.31
+ ROUTED TO	RA11I	331.	5.27	105.	27.	20.	1.31
+ HYDROGRAPH AT	A11EA	52.	4.57	11.	3.	2.	.14
+ ROUTED TO	RA11EA	51.	4.77	11.	3.	2.	.14
+ HYDROGRAPH AT	A11EB	41.	4.90	13.	3.	2.	.19
+ 3 COMBINED AT	CA11EB	368.	5.27	118.	31.	22.	1.64

+ HYDROGRAPH AT	41	56.	4.20	5.	1.	1.	.05
+ ROUTED TO	B41	46.	4.27	5.	1.	1.	.05
+ HYDROGRAPH AT	42	88.	4.20	10.	2.	2.	.08
+ ROUTED TO	B42	77.	4.27	10.	2.	2.	.08
+ 2 COMBINED AT	C41	122.	4.27	15.	4.	3.	.13
+ ROUTED TO	RC41	104.	4.77	15.	4.	3.	.13
+ HYDROGRAPH AT	A11F	131.	4.60	25.	6.	5.	.33
+ 2 COMBINED AT	CA11F	223.	4.70	39.	10.	7.	.46
+ 2 COMBINED AT	CA11E	428.	5.23	139.	36.	26.	2.11
+ ROUTED TO	RA11E	422.	5.33	139.	36.	26.	2.11
+ HYDROGRAPH AT	A09U	136.	4.27	17.	4.	3.	.17
+ DIVERSION TO	A09UI	0.	.00	0.	0.	0.	.17
+ HYDROGRAPH AT	DA09U	136.	4.27	17.	4.	3.	.17
+ ROUTED TO	RA09UW	111.	4.73	17.	4.	3.	.17
+ HYDROGRAPH AT	A09T	71.	4.53	12.	3.	2.	.18
+ 2 COMBINED AT	CA09T	172.	4.67	29.	7.	5.	.36
+ DIVERSION TO	A09TI	0.	.00	0.	0.	0.	.36
+ HYDROGRAPH AT	DA09T	172.	4.67	29.	7.	5.	.36
+ ROUTED TO	RA09TW	169.	4.77	29.	7.	5.	.36
+ HYDROGRAPH AT	A11A	202.	4.47	37.	9.	7.	.30
+ DIVERSION TO	DA11A	200.	4.43	16.	4.	3.	.30

+	HYDROGRAPH AT	DA11AQ	201.	4.50	22.	6.	4.	.30
+	3 COMBINED AT	CX23	485.	5.30	164.	43.	31.	2.76
+	ROUTED TO	RX23	472.	5.57	164.	43.	31.	2.76
+	HYDROGRAPH AT	S1	46.	4.57	10.	3.	2.	.12
+	HYDROGRAPH AT	P2	50.	4.13	6.	1.	1.	.05
+	DIVERSION TO	RB2	50.	4.13	6.	1.	1.	.05
+	HYDROGRAPH AT	RT2	0.	.00	0.	0.	0.	.05
+	3 COMBINED AT	CS1	474.	5.57	167.	44.	32.	2.93
+	ROUTED TO	RS1	474.	5.60	167.	44.	32.	2.93
+	HYDROGRAPH AT	S2	13.	4.10	1.	0.	0.	.01
+	HYDROGRAPH AT	S3	8.	4.07	0.	0.	0.	.01
+	3 COMBINED AT	CS2	473.	5.63	167.	44.	32.	2.95
+	ROUTED TO	RS2	473.	5.63	167.	44.	32.	2.95
+	HYDROGRAPH AT	P3	37.	4.23	6.	2.	1.	.05
+	DIVERSION TO	RB3	37.	4.23	6.	2.	1.	.05
+	HYDROGRAPH AT	RT3	0.	.00	0.	0.	0.	.05
+	2 COMBINED AT	CP3	473.	5.63	167.	44.	32.	3.01
+	HYDROGRAPH AT	P4b	22.	4.10	2.	0.	0.	.02
+	DIVERSION TO	RB4b	16.	3.97	1.	0.	0.	.02
+	HYDROGRAPH AT	RT4b	22.	4.10	1.	0.	0.	.02
+	HYDROGRAPH AT	S4	5.	4.37	1.	0.	0.	.01
	HYDROGRAPH AT							

+		P1	15.	4.33	2.	1.	0.	.03
+	DIVERSION TO	DB1	15.	4.33	1.	0.	0.	.03
+	HYDROGRAPH AT	DT1	12.	4.50	1.	0.	0.	.03
+	2 COMBINED AT	CP1	17.	4.50	2.	1.	0.	.04
+	HYDROGRAPH AT	HV2	3.	5.30	2.	1.	1.	.03
+	ROUTED TO	RHV2	3.	5.37	2.	1.	1.	.03
+	DIVERSION TO	DBHV2	3.	5.37	1.	0.	0.	.03
+	HYDROGRAPH AT	DTHV2	2.	7.17	1.	0.	0.	.03
+	HYDROGRAPH AT	P4a	22.	4.27	4.	1.	1.	.04
+	DIVERSION TO	DB4a	22.	4.27	1.	0.	0.	.04
+	HYDROGRAPH AT	DT4a	21.	4.37	3.	1.	0.	.04
+	5 COMBINED AT	SOUTH	472.	5.63	169.	45.	32.	3.14
+	HYDROGRAPH AT	N11O	27.	4.43	3.	1.	1.	.05
+	DIVERSION TO	N11OI	24.	4.43	3.	1.	1.	.05
+	HYDROGRAPH AT	DN11O	3.	4.43	0.	0.	0.	.05
+	ROUTED TO	RN11OW	2.	5.50	0.	0.	0.	.05
+	HYDROGRAPH AT	DRA09T	0.	.00	0.	0.	0.	.36
+	ROUTED TO	RA09TS	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	A09R	33.	4.83	9.	2.	2.	.14
+	3 COMBINED AT	CA09R	33.	4.83	9.	2.	2.	.20
+	DIVERSION TO	A09RI	32.	4.83	9.	2.	2.	.20
+	HYDROGRAPH AT	DA09R	0.	4.83	0.	0.	0.	.20

+	ROUTED TO	RA09RW	0.	7.20	0.	0.	0.	.20
+	HYDROGRAPH AT	A09S	59.	4.27	12.	3.	2.	.07
+	DIVERSION TO	DA09S	59.	4.27	12.	3.	2.	.07
+	HYDROGRAPH AT	DA09SQ	0.	.00	0.	0.	0.	.07
+	2 COMBINED AT	CA09S	0.	7.20	0.	0.	0.	.27
+	ROUTED TO	RA09SW	0.	7.37	0.	0.	0.	.27
+	HYDROGRAPH AT	A09QA	37.	4.50	6.	1.	1.	.09
+	2 COMBINED AT	CA09QA	36.	4.50	6.	1.	1.	.36
+	DIVERSION TO	A09QAI	36.	4.50	5.	1.	1.	.36
+	HYDROGRAPH AT	DA09QA	1.	5.20	0.	0.	0.	.36
+	ROUTED TO	RA09QW	1.	5.33	0.	0.	0.	.36
+	HYDROGRAPH AT	A99YA	55.	4.37	7.	2.	1.	.10
+	2 COMBINED AT	CA99YA	55.	4.37	7.	2.	1.	.46
+	ROUTED TO	RA99YA	53.	4.47	7.	2.	1.	.46
+	HYDROGRAPH AT	A99YB	66.	4.50	10.	3.	2.	.17
+	3 COMBINED AT	CA99YB	468.	5.63	172.	46.	33.	3.77
+	3 COMBINED AT	AFR1	483.	5.63	193.	51.	37.	4.56
+	HYDROGRAPH AT	BA09UI	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09US	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	N11NB	56.	4.53	11.	3.	2.	.14
+	2 COMBINED AT	CN11NB	56.	4.53	11.	3.	2.	.14

+	ROUTED TO	RN11NW	51.	5.10	11.	3.	2.	.14
+	HYDROGRAPH AT	BN11OI	24.	4.43	3.	1.	1.	.05
+	ROUTED TO	RN11OS	19.	5.10	3.	1.	1.	.05
+	HYDROGRAPH AT	N11M	44.	4.43	6.	1.	1.	.10
+	3 COMBINED AT	CN11M	80.	5.07	20.	5.	4.	.24
+	DIVERSION TO	N11MI	20.	5.07	5.	1.	1.	.24
+	HYDROGRAPH AT	DN11M	60.	5.07	15.	4.	3.	.24
+	ROUTED TO	RN11MS	58.	5.33	15.	4.	3.	.24
+	HYDROGRAPH AT	N11J	79.	4.50	20.	5.	4.	.24
+	DIVERSION TO	LN11JD	67.	4.33	4.	1.	1.	.24
+	HYDROGRAPH AT	LN11J	79.	4.50	16.	4.	3.	.24
+	2 COMBINED AT	CN11J	107.	4.73	31.	8.	6.	.48
+	DIVERSION TO	N11JI	107.	4.73	31.	8.	6.	.48
+	HYDROGRAPH AT	DN11J	0.	.00	0.	0.	0.	.48
+	ROUTED TO	RN11JW	0.	.00	0.	0.	0.	.48
+	HYDROGRAPH AT	DRN11M	20.	5.07	5.	1.	1.	.24
+	ROUTED TO	RN11MW	18.	5.80	5.	1.	1.	.24
+	2 COMBINED AT	CX4	18.	5.80	5.	1.	1.	.48
+	ROUTED TO	RX4	17.	6.30	5.	1.	1.	.48
+	HYDROGRAPH AT	A09O	40.	5.00	14.	4.	3.	.19
+	ROUTED TO	SA09O	19.	6.13	12.	4.	3.	.19
	HYDROGRAPH AT							

+	BA09RI	32.	4.83	9.	2.	2.	.20
+ ROUTED TO	RA09RS	31.	5.30	9.	2.	2.	.20
+ 3 COMBINED AT	CA09O	49.	5.77	24.	6.	5.	.68
+ DIVERSION TO	A09OI	49.	5.77	24.	6.	5.	.68
+ HYDROGRAPH AT	DA09O	0.	.00	0.	0.	0.	.68
+ ROUTED TO	RA09OW	0.	.00	0.	0.	0.	.68
+ HYDROGRAPH AT	A09P	64.	4.70	14.	4.	3.	.19
+ ROUTED TO	SA09P	29.	5.43	14.	4.	3.	.19
+ 2 COMBINED AT	CA09P	25.	5.43	12.	3.	2.	.87
+ ROUTED TO	RA09P	25.	5.53	12.	3.	2.	.87
+ HYDROGRAPH AT	BA09QA	36.	4.50	5.	1.	1.	.36
+ ROUTED TO	RA09QB	34.	4.80	5.	1.	1.	.36
+ HYDROGRAPH AT	A09QB	57.	4.37	11.	3.	2.	.14
+ 3 COMBINED AT	CA09Q	71.	4.77	24.	6.	4.	1.01
+ DIVERSION TO	A09QI	71.	4.77	24.	6.	4.	1.01
+ HYDROGRAPH AT	DA09Q	0.	.00	0.	0.	0.	1.01
+ ROUTED TO	RA09QW	0.	.00	0.	0.	0.	1.01
+ HYDROGRAPH AT	A10A	94.	4.47	14.	4.	3.	.19
+ 2 COMBINED AT	CA10A	72.	4.50	12.	3.	2.	1.20
+ ROUTED TO	RA10A	71.	4.57	12.	3.	2.	1.20
+ HYDROGRAPH AT	A99X	233.	4.30	32.	8.	6.	.26
+ 2 COMBINED AT	CA99X	210.	4.37	38.	10.	7.	1.46

+ 2 COMBINED AT	AFR2	472.	5.63	210.	56.	41.	6.02
+ HYDROGRAPH AT	BA09OI	49.	5.77	24.	6.	5.	.68
+ ROUTED TO	RA09OS	49.	6.17	23.	6.	5.	.68
+ HYDROGRAPH AT	A09K	125.	4.83	26.	7.	5.	.41
+ DIVERSION TO	A09KI	91.	4.83	19.	5.	3.	.41
+ HYDROGRAPH AT	DA09K	34.	4.83	7.	2.	1.	.41
+ 2 COMBINED AT	CX7	65.	5.80	32.	9.	6.	.41
+ ROUTED TO	RX7S	64.	6.07	32.	9.	6.	.41
+ HYDROGRAPH AT	N11NA	28.	4.13	2.	1.	0.	.02
+ ROUTED TO	RN11NA	20.	4.60	2.	1.	0.	.02
+ HYDROGRAPH AT	N11NC	91.	4.37	12.	3.	2.	.17
+ 2 COMBINED AT	CN11NC	103.	4.43	15.	4.	3.	.19
+ DIVERSION TO	N11NP	103.	4.43	15.	4.	3.	.19
+ HYDROGRAPH AT	DN11NC	0.	.00	0.	0.	0.	.19
+ ROUTED TO	RN11NC	0.	.00	0.	0.	0.	.19
+ HYDROGRAPH AT	N11ND	23.	4.33	5.	1.	1.	.05
+ HYDROGRAPH AT	N11K	54.	4.47	13.	3.	2.	.17
+ 3 COMBINED AT	CN11K	76.	4.43	18.	4.	3.	.41
+ DIVERSION TO	N11KP	55.	4.23	16.	4.	3.	.41
+ HYDROGRAPH AT	DN11KS	21.	4.43	2.	0.	0.	.41
+ ROUTED TO	RN11K	14.	5.30	2.	0.	0.	.41

+	DIVERSION TO	X5I	0.	.00	0.	0.	0.	.41
+	HYDROGRAPH AT	DX5	14.	5.30	2.	0.	0.	.41
+	ROUTED TO	RX5W	12.	5.80	2.	0.	0.	.41
+	HYDROGRAPH AT	N11H	131.	4.83	26.	7.	5.	.42
+	2 COMBINED AT	CN11H	106.	4.83	22.	6.	4.	.83
+	ROUTED TO	RN11H	98.	5.17	22.	6.	4.	.83
+	HYDROGRAPH AT	BN11JI	107.	4.73	31.	8.	6.	.48
+	ROUTED TO	RN11JS	106.	5.50	31.	8.	6.	.48
+	HYDROGRAPH AT	N11G	165.	4.83	31.	8.	6.	.52
+	3 COMBINED AT	CN11G	192.	5.23	58.	15.	11.	1.36
+	ROUTED TO	RN11G	186.	5.40	58.	15.	11.	1.36
+	HYDROGRAPH AT	N11DA	124.	4.43	29.	7.	5.	.26
+	DIVERSION TO	LDAOUT	124.	4.43	16.	4.	3.	.26
+	HYDROGRAPH AT	LN11DA	98.	4.83	13.	3.	2.	.26
+	ROUTED TO	SN11DA	62.	5.20	13.	3.	2.	.26
+	DIVERSION TO	D11DAS	16.	5.20	5.	1.	1.	.26
+	HYDROGRAPH AT	N11DAW	46.	5.20	8.	2.	1.	.26
+	ROUTED TO	RN11DA	45.	5.47	8.	2.	1.	.26
+	HYDROGRAPH AT	N11FB	48.	4.47	13.	3.	2.	.12
+	DIVERSION TO	LN1FBD	48.	4.47	13.	3.	2.	.12
+	HYDROGRAPH AT	LN11FB	0.	.00	0.	0.	0.	.12
	2 COMBINED AT							

+		CN11FB	45.	5.47	8.	2.	1.	.38
+	2 COMBINED AT	C98RGL	186.	5.63	58.	15.	11.	1.73
+	ROUTED TO	RN11FB	172.	5.77	54.	14.	10.	1.73
+	HYDROGRAPH AT	DRA09K	91.	4.83	19.	5.	3.	.41
+	ROUTED TO	RA09KS	87.	5.07	19.	5.	3.	.41
+	HYDROGRAPH AT	N11FA	84.	4.43	21.	5.	4.	.18
+	DIVERSION TO	LN1FAD	84.	4.43	16.	4.	3.	.18
+	HYDROGRAPH AT	LN11FA	39.	5.30	6.	1.	1.	.18
+	HYDROGRAPH AT	A09GA	111.	4.10	14.	3.	2.	.07
+	DIVERSION TO	L09GAD	111.	4.10	12.	3.	2.	.07
+	HYDROGRAPH AT	LA09GA	24.	4.60	2.	0.	0.	.07
+	4 COMBINED AT	CN11FA	192.	5.77	63.	16.	11.	1.99
+	ROUTED TO	RN11FA	190.	5.83	63.	16.	11.	1.99
+	HYDROGRAPH AT	A09GB	11.	4.90	5.	2.	1.	.05
+	DIVERSION TO	L09GBD	11.	4.90	5.	1.	1.	.05
+	HYDROGRAPH AT	LA09GB	1.	9.90	0.	0.	0.	.05
+	2 COMBINED AT	CA09G	190.	5.83	62.	16.	11.	2.04
+	DIVERSION TO	A09GI	37.	5.83	12.	3.	2.	2.04
+	HYDROGRAPH AT	DA09G	150.	5.83	49.	12.	9.	2.04
+	ROUTED TO	RA09GW	147.	5.90	49.	12.	9.	2.04
+	2 COMBINED AT	CX8	148.	6.03	58.	15.	11.	2.45
+	ROUTED TO	RX8W	145.	6.23	57.	15.	11.	2.45

+	HYDROGRAPH AT	A09H	83.	4.60	26.	7.	5.	.24
+	DIVERSION TO	LA09HD	83.	4.60	25.	6.	5.	.24
+	HYDROGRAPH AT	LA09H	10.	7.30	2.	0.	0.	.24
+	2 COMBINED AT	CA09H1	145.	6.23	57.	15.	11.	2.69
+	HYDROGRAPH AT	A09J	70.	4.47	18.	5.	3.	.17
+	DIVERSION TO	LA09JD	70.	4.47	16.	4.	3.	.17
+	HYDROGRAPH AT	LA09J	20.	5.83	3.	1.	1.	.17
+	DIVERSION TO	A09JI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09J	20.	5.83	3.	1.	1.	.17
+	ROUTED TO	RA09JS	15.	6.47	3.	1.	1.	.17
+	2 COMBINED AT	CA09H	152.	6.27	57.	15.	11.	2.85
+	ROUTED TO	RA09H	129.	6.33	51.	13.	10.	2.85
+	HYDROGRAPH AT	BA09QI	71.	4.77	24.	6.	4.	1.01
+	ROUTED TO	RA09QS	70.	4.97	24.	6.	4.	1.01
+	HYDROGRAPH AT	A09M	100.	4.67	24.	6.	4.	.25
+	DIVERSION TO	LA09MD	100.	4.67	14.	3.	3.	.25
+	HYDROGRAPH AT	LA09M	77.	5.00	11.	3.	2.	.25
+	2 COMBINED AT	CA09M	168.	5.00	40.	10.	7.	.25
+	ROUTED TO	RA09M	156.	5.13	40.	10.	7.	.25
+	HYDROGRAPH AT	A09N	57.	4.37	12.	3.	2.	.11
+	2 COMBINED AT	CA09N	184.	5.10	52.	13.	10.	.36

+	ROUTED TO	LA09N	110.	5.63	48.	13.	10.	.36
+	ROUTED TO	RA09N	110.	5.73	48.	13.	10.	.36
+	HYDROGRAPH AT	DRA09J	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09JW	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	A09L	58.	4.47	15.	4.	3.	.14
+	3 COMBINED AT	CA09L	130.	5.60	61.	17.	12.	.50
+	ROUTED TO	LA09L	122.	5.93	60.	17.	12.	.50
+	ROUTED TO	RA09LS	122.	6.03	60.	17.	12.	.50
+	HYDROGRAPH AT	A09IH	42.	4.37	10.	2.	2.	.09
+	2 COMBINED AT	CA09IH	123.	5.97	66.	19.	14.	.59
+	ROUTED TO	LA09IH	111.	6.43	64.	19.	14.	.59
+	HYDROGRAPH AT	A09I	59.	4.47	16.	4.	3.	.13
+	DIVERSION TO	LA09ID	59.	4.47	11.	3.	2.	.13
+	HYDROGRAPH AT	LA09I	33.	5.30	6.	1.	1.	.13
+	3 COMBINED AT	CX10	178.	6.33	85.	25.	18.	3.57
+	ROUTED TO	RX10	175.	6.60	85.	25.	18.	3.57
+	HYDROGRAPH AT	A99V	96.	4.57	15.	4.	3.	.21
+	2 COMBINED AT	CA99V	172.	6.60	88.	26.	19.	3.77
+	HYDROGRAPH AT	A10	121.	4.40	15.	4.	3.	.21
+	HYDROGRAPH AT	A99W	96.	4.77	23.	6.	4.	.22
+	DIVERSION TO	LA99WD	96.	4.77	14.	3.	2.	.22
	HYDROGRAPH AT							

+		LA99W	79.	5.07	10.	3.	2.	.22
+	4 COMBINED AT	AFR3	473.	5.80	253.	71.	51.	10.22
+	HYDROGRAPH AT	DRA09G	37.	5.83	12.	3.	2.	2.04
+	ROUTED TO	RA09GS	34.	6.47	12.	3.	2.	2.04
+	HYDROGRAPH AT	A09F	186.	4.70	45.	11.	8.	.37
+	DIVERSION TO	LA09FD	186.	4.70	27.	7.	5.	.37
+	HYDROGRAPH AT	LA09F	146.	5.03	18.	5.	3.	.37
+	2 COMBINED AT	CA09F	146.	5.03	43.	11.	8.	.37
+	DIVERSION TO	A09FI	10.	5.03	1.	0.	0.	.37
+	HYDROGRAPH AT	DA09F	137.	5.03	42.	11.	8.	.37
+	ROUTED TO	RA09FW	125.	6.07	41.	11.	8.	.37
+	HYDROGRAPH AT	A09E	64.	4.47	17.	5.	3.	.15
+	DIVERSION TO	LA09ED	64.	4.47	17.	4.	3.	.15
+	HYDROGRAPH AT	LA09E	10.	6.60	1.	0.	0.	.15
+	2 COMBINED AT	CA09E	125.	6.07	43.	11.	8.	.51
+	ROUTED TO	RA09E	121.	6.20	42.	11.	8.	.51
+	HYDROGRAPH AT	A09D	286.	4.20	34.	9.	6.	.25
+	DIVERSION TO	LA09DD	286.	4.20	31.	8.	6.	.25
+	HYDROGRAPH AT	LA09D	52.	4.80	3.	1.	1.	.25
+	2 COMBINED AT	CA09C*	121.	6.20	44.	11.	8.	.77
+	ROUTED TO	RA09C*	106.	6.23	39.	10.	7.	.77
+	HYDROGRAPH AT	A09C	27.	4.57	5.	1.	1.	.07

+	2 COMBINED AT	CA09C	105.	6.20	42.	11.	8.	.84
+	ROUTED TO	RA09C	104.	6.33	41.	11.	8.	.84
+	HYDROGRAPH AT	A09B	63.	4.07	7.	2.	1.	.04
+	ROUTED TO	RA09B	48.	4.60	7.	2.	1.	.04
+	HYDROGRAPH AT	A09A	32.	4.77	10.	2.	2.	.08
+	3 COMBINED AT	CA09A	108.	6.30	53.	14.	10.	.96
+	DIVERSION TO	A09AI	0.	6.23	0.	0.	0.	.96
+	HYDROGRAPH AT	DA09AO	108.	6.30	53.	14.	10.	.96
+	ROUTED TO	RA09AW	96.	7.33	51.	14.	10.	.96
+	HYDROGRAPH AT	A99T	37.	4.07	3.	1.	1.	.03
+	DIVERSION TO	LA99TD	26.	3.93	1.	0.	0.	.03
+	HYDROGRAPH AT	LA99T	37.	4.07	2.	0.	0.	.03
+	ROUTED TO	RA99T	28.	4.23	2.	0.	0.	.03
+	HYDROGRAPH AT	A09	97.	4.47	15.	4.	3.	.18
+	3 COMBINED AT	CA09	90.	7.37	58.	17.	12.	1.17
+	HYDROGRAPH AT	A99U	34.	4.40	7.	2.	1.	.07
+	3 COMBINED AT	AFR4	481.	5.80	273.	79.	57.	11.46
+	HYDROGRAPH AT	A99S	13.	4.93	4.	1.	1.	.08
+	HYDROGRAPH AT	A08A	26.	5.13	10.	3.	2.	.14
+	ROUTED TO	RA08A	26.	5.33	10.	3.	2.	.14
+	HYDROGRAPH AT	A99R	20.	4.33	3.	1.	0.	.04

+	ROUTED TO	RA99R	18.	4.70	3.	1.	0.	.04
+	HYDROGRAPH AT	A08	69.	4.13	5.	1.	1.	.08
+	4 COMBINED AT	CA08	72.	4.13	21.	6.	4.	.33
+	2 COMBINED AT	AFR5	489.	5.80	278.	80.	58.	11.79
+	HYDROGRAPH AT	A07G	192.	4.33	37.	9.	7.	.26
+	DIVERSION TO	LA07GD	192.	4.33	26.	7.	5.	.26
+	HYDROGRAPH AT	LA07G	111.	4.87	11.	3.	2.	.26
+	ROUTED TO	RA07G	80.	5.20	11.	3.	2.	.26
+	HYDROGRAPH AT	A07F	73.	4.93	25.	6.	5.	.23
+	ROUTED TO	RA07F	73.	5.07	25.	6.	5.	.23
+	HYDROGRAPH AT	A07E	210.	4.27	37.	9.	7.	.23
+	3 COMBINED AT	CA07E	217.	4.30	69.	18.	13.	.72
+	ROUTED TO	RA07E	216.	4.40	69.	18.	13.	.72
+	HYDROGRAPH AT	A07C	65.	4.67	13.	3.	2.	.17
+	2 COMBINED AT	CA07C	256.	4.50	79.	21.	15.	.89
+	ROUTED TO	RA07C	255.	4.53	79.	21.	15.	.89
+	HYDROGRAPH AT	A07H	106.	4.20	13.	3.	2.	.09
+	ROUTED TO	RA07H	101.	4.33	13.	3.	2.	.09
+	HYDROGRAPH AT	DA09AI	0.	6.23	0.	0.	0.	.96
+	ROUTED TO	RA09AI	0.	7.00	0.	0.	0.	.96
+	HYDROGRAPH AT	A08B	53.	4.50	11.	3.	2.	.10
	2 COMBINED AT							

+		CA08B	53.	4.50	11.	3.	2.	.10
+	ROUTED TO	RA08B	49.	5.03	11.	3.	2.	.10
+	HYDROGRAPH AT	A07D	44.	5.23	18.	5.	3.	.23
+	4 COMBINED AT	CA07D	324.	4.47	110.	29.	21.	1.31
+	ROUTED TO	RA07D	315.	4.77	109.	29.	21.	1.31
+	HYDROGRAPH AT	S30D	98.	4.33	18.	4.	3.	.13
+	ROUTED TO	RS30D	92.	4.70	18.	4.	3.	.13
+	HYDROGRAPH AT	S30C	233.	4.53	65.	17.	12.	.45
+	HYDROGRAPH AT	DA09FI	10.	5.03	1.	0.	0.	.37
+	ROUTED TO	RA09FI	4.	6.67	1.	0.	0.	.37
+	3 COMBINED AT	XX1	313.	4.67	83.	21.	15.	.58
+	HYDROGRAPH AT	S30B	128.	5.00	44.	11.	8.	.40
+	2 COMBINED AT	CS30B	396.	4.73	121.	31.	23.	.98
+	DIVERSION TO	DS30BI	0.	4.67	0.	0.	0.	.98
+	HYDROGRAPH AT	DS30BO	396.	4.73	121.	31.	23.	.98
+	ROUTED TO	RS30BW	390.	5.03	121.	31.	23.	.98
+	HYDROGRAPH AT	S30A	223.	4.57	64.	16.	12.	.53
+	2 COMBINED AT	CS30A	540.	4.97	174.	45.	33.	1.51
+	DIVERSION TO	DS30AI	25.	4.93	2.	0.	0.	1.51
+	HYDROGRAPH AT	DS30AO	516.	5.00	173.	45.	32.	1.51
+	ROUTED TO	RS30AW	515.	5.13	172.	45.	32.	1.51
+	HYDROGRAPH AT	S30	155.	4.37	34.	9.	6.	.32

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+          2 COMBINED AT
                          CS30      574.   5.03       196.       51.       37.      1.84
+          ROUTED TO
                          RS30      574.   5.07       196.       51.       37.      1.84
+          HYDROGRAPH AT
                          A07B      327.   4.33        61.       15.       11.       .65
+          DIVERSION TO
                         LA07BD     327.   4.33        39.       10.        7.       .65
+          HYDROGRAPH AT
                          LA07B     208.   4.73        22.        6.        4.       .65
+          3 COMBINED AT
                          CA07B     781.   5.07       283.       74.       53.      3.80
1
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SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
FOR STORM = 1 STORM AREA (SQ MI) = .01									
RCBA	MANE	2.00	7.29	256.00	.91	2.00	7.29	256.00	.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3386E+00 EXCESS= .0000E+00 OUTFLOW= .3386E+00 BASIN STORAGE= .6949E-03 PERCENT ERROR= -.2

FOR STORM = 2 STORM AREA (SQ MI) = .50									
RCBA	MANE	2.00	7.22	256.00	.90	2.00	7.22	256.00	.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3348E+00 EXCESS= .0000E+00 OUTFLOW= .3348E+00 BASIN STORAGE= .6918E-03 PERCENT ERROR= -.2

FOR STORM = 3 STORM AREA (SQ MI) = 2.80									
RCBA	MANE	2.00	3.87	258.00	.70	2.00	3.87	258.00	.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2629E+00 EXCESS= .0000E+00 OUTFLOW= .2628E+00 BASIN STORAGE= .7277E-03 PERCENT ERROR= -.2

FOR STORM = 4 STORM AREA (SQ MI) = 16.00									
RCBA	MANE	2.00	2.64	260.00	.53	2.00	2.64	260.00	.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1997E+00 EXCESS= .0000E+00 OUTFLOW= .1996E+00 BASIN STORAGE= .6755E-03 PERCENT ERROR= -.3

FOR STORM = 5 STORM AREA (SQ MI) = 90.00									
RCBA	MANE	2.00	1.28	262.00	.31	2.00	1.28	262.00	.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1150E+00 EXCESS= .0000E+00 OUTFLOW= .1150E+00 BASIN STORAGE= .7026E-03 PERCENT ERROR= -.6

FOR STORM = 1 STORM AREA (SQ MI) = .01									
RCBB	MANE	2.00	17.16	250.00	.81	2.00	17.16	250.00	.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7376E+00 EXCESS= .0000E+00 OUTFLOW= .7377E+00 BASIN STORAGE= .4143E-03 PERCENT ERROR= -.1

FOR STORM = 2 STORM AREA (SQ MI) = .50									
RCBB	MANE	2.00	16.97	250.00	.81	2.00	16.97	250.00	.81

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 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7298E+00 EXCESS= .0000E+00 OUTFLOW= .7299E+00 BASIN STORAGE= .4124E-03 PERCENT ERROR=
-.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
              RCBB  MANE         2.00      7.17    252.00       .51      2.00      7.17    252.00         .51


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4608E+00 EXCESS= .0000E+00 OUTFLOW= .4608E+00 BASIN STORAGE= .4020E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
              RCBB  MANE         2.00      3.95    252.00       .36      2.00      3.95    252.00         .36


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3221E+00 EXCESS= .0000E+00 OUTFLOW= .3220E+00 BASIN STORAGE= .4066E-03 PERCENT ERROR=
-.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
              RCBB  MANE         2.00      1.52    252.00       .25      2.00      1.52    252.00         .25


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2230E+00 EXCESS= .0000E+00 OUTFLOW= .2231E+00 BASIN STORAGE= .4046E-03 PERCENT ERROR=
-.2

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
              R28a  MANE         2.00     30.62    276.00       .71      2.00     30.62    276.00         .71


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1963E+01 EXCESS= .0000E+00 OUTFLOW= .1943E+01 BASIN STORAGE= .2211E-02 PERCENT ERROR=
 .9
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          FOR STORM = 2  STORM AREA (SQ MI) =        .50
              R28a  MANE         2.00     30.05    276.00       .70      2.00     30.05    276.00         .70


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1935E+01 EXCESS= .0000E+00 OUTFLOW= .1915E+01 BASIN STORAGE= .2154E-02 PERCENT ERROR=
 .9

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
              R28a  MANE         2.00     20.25    286.00       .55      2.00     20.25    286.00         .55


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1496E+01 EXCESS= .0000E+00 OUTFLOW= .1483E+01 BASIN STORAGE= .2272E-02 PERCENT ERROR=
 .7

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
              R28a  MANE         2.00     13.02    296.00       .40      2.00     13.02    296.00         .40


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1096E+01 EXCESS= .0000E+00 OUTFLOW= .1085E+01 BASIN STORAGE= .2135E-02 PERCENT ERROR=
 .8

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
              R28a  MANE         2.00      5.45    326.00       .20      2.00      5.45    326.00         .20


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .5514E+00 EXCESS= .0000E+00 OUTFLOW= .5447E+00 BASIN STORAGE= .2373E-02 PERCENT ERROR=
 .8

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
              RCBL  MANE         2.00    106.61    260.00       .88      2.00    106.61    260.00         .88
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .7703E+01 EXCESS= .0000E+00 OUTFLOW= .7704E+01 BASIN STORAGE= .7700E-04 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RCBL	MANE	2.00	104.58	260.00	.86	2.00	104.58	260.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7611E+01 EXCESS= .0000E+00 OUTFLOW= .7612E+01 BASIN STORAGE= .7699E-04 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RCBL	MANE	2.00	74.05	264.00	.71	2.00	74.05	264.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6249E+01 EXCESS= .0000E+00 OUTFLOW= .6248E+01 BASIN STORAGE= .7831E-04 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RCBL	MANE	2.00	51.78	268.00	.55	2.00	51.78	268.00	.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4880E+01 EXCESS= .0000E+00 OUTFLOW= .4880E+01 BASIN STORAGE= .7485E-04 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RCBL	MANE	2.00	29.11	276.00	.34	2.00	29.11	276.00	.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2969E+01 EXCESS= .0000E+00 OUTFLOW= .2968E+01 BASIN STORAGE= .7605E-04 PERCENT ERROR= .0

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

RCBK	MANE	1.56	140.13	261.55	.83	2.00	138.92	262.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9644E+01 EXCESS= .0000E+00 OUTFLOW= .9644E+01 BASIN STORAGE= .3861E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RCBK	MANE	1.56	136.75	262.84	.82	2.00	135.50	262.00	.82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9525E+01 EXCESS= .0000E+00 OUTFLOW= .9525E+01 BASIN STORAGE= .3915E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RCBK	MANE	1.78	86.96	265.61	.63	2.00	85.47	266.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7285E+01 EXCESS= .0000E+00 OUTFLOW= .7286E+01 BASIN STORAGE= .3911E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RCBK	MANE	2.00	58.22	270.00	.47	2.00	58.22	270.00	.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5466E+01 EXCESS= .0000E+00 OUTFLOW= .5466E+01 BASIN STORAGE= .3940E-03 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RCBK	MANE	2.00	31.16	280.00	.28	2.00	31.16	280.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3241E+01 EXCESS= .0000E+00 OUTFLOW= .3241E+01 BASIN STORAGE= .3815E-03 PERCENT ERROR= .0

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FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R15  MANE         2.00    145.32    264.00       .78      2.00    145.32    264.00         .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1021E+02 EXCESS= .0000E+00 OUTFLOW= .1021E+02 BASIN STORAGE= .5258E-03 PERCENT ERROR=
.0

FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R15  MANE         2.00    141.82    264.00       .77      2.00    141.82    264.00         .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1007E+02 EXCESS= .0000E+00 OUTFLOW= .1007E+02 BASIN STORAGE= .5252E-03 PERCENT ERROR=
.0

FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R15  MANE         2.00     88.32    268.00       .58      2.00     88.32    268.00         .58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7572E+01 EXCESS= .0000E+00 OUTFLOW= .7572E+01 BASIN STORAGE= .5052E-03 PERCENT ERROR=
.0

FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R15  MANE         2.00     59.00    272.00       .43      2.00     59.00    272.00         .43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5649E+01 EXCESS= .0000E+00 OUTFLOW= .5648E+01 BASIN STORAGE= .5341E-03 PERCENT ERROR=
.0

FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R15  MANE         2.00     32.98    282.00       .26      2.00     32.98    282.00         .26
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .3373E+01 EXCESS= .0000E+00 OUTFLOW= .3373E+01 BASIN STORAGE= .5116E-03 PERCENT ERROR=
.0

FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE1  MANE         2.00     11.95    254.00       .58      2.00     11.95    254.00         .58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4336E+00 EXCESS= .0000E+00 OUTFLOW= .4343E+00 BASIN STORAGE= .8999E-03 PERCENT ERROR=
-.4

FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE1  MANE         2.00     11.79    254.00       .57      2.00     11.79    254.00         .57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4277E+00 EXCESS= .0000E+00 OUTFLOW= .4284E+00 BASIN STORAGE= .8959E-03 PERCENT ERROR=
-.4

FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE1  MANE         2.00      3.44    256.00       .20      2.00      3.44    256.00         .20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1490E+00 EXCESS= .0000E+00 OUTFLOW= .1491E+00 BASIN STORAGE= .8949E-03 PERCENT ERROR=
-.7

FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE1  MANE         2.00      1.11    262.00       .08      2.00      1.11    262.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5675E-01 EXCESS= .0000E+00 OUTFLOW= .5669E-01 BASIN STORAGE= .8871E-03 PERCENT ERROR=
-1.4
```

```
FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE1  MANE         2.00       .17    268.00       .03      2.00       .17    268.00         .03


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2450E-01 EXCESS= .0000E+00 OUTFLOW= .2459E-01 BASIN STORAGE= .8667E-03 PERCENT ERROR=
-3.9


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE2  MANE         2.00     10.59    252.00       .68      2.00     10.59    252.00         .68


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5806E+00 EXCESS= .0000E+00 OUTFLOW= .5807E+00 BASIN STORAGE= .4419E-03 PERCENT ERROR=
-.1


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE2  MANE         2.00     10.47    252.00       .67      2.00     10.47    252.00         .67


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5740E+00 EXCESS= .0000E+00 OUTFLOW= .5741E+00 BASIN STORAGE= .4399E-03 PERCENT ERROR=
-.1


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE2  MANE         2.00      4.09    254.00       .33      2.00      4.09    254.00         .33


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2853E+00 EXCESS= .0000E+00 OUTFLOW= .2852E+00 BASIN STORAGE= .4433E-03 PERCENT ERROR=
-.1


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE2  MANE         2.00      1.92    254.00       .18      2.00      1.92    254.00         .18
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+00 EXCESS= .0000E+00 OUTFLOW= .1495E+00 BASIN STORAGE= .4356E-03 PERCENT ERROR=
-.3


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE2  MANE         2.00       .42    260.00       .08      2.00       .42    260.00         .08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6997E-01 EXCESS= .0000E+00 OUTFLOW= .7000E-01 BASIN STORAGE= .4138E-03 PERCENT ERROR=
-.6


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R13  MANE         2.00     74.72    256.00       .63      2.00     74.72    256.00         .63


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2982E+01 EXCESS= .0000E+00 OUTFLOW= .2972E+01 BASIN STORAGE= .1382E-02 PERCENT ERROR=
.3


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R13  MANE         2.00     73.83    256.00       .62      2.00     73.83    256.00         .62


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2941E+01 EXCESS= .0000E+00 OUTFLOW= .2931E+01 BASIN STORAGE= .1376E-02 PERCENT ERROR=
.3


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R13  MANE         2.00     29.74    264.00       .30      2.00     29.74    264.00         .30


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1444E+01 EXCESS= .0000E+00 OUTFLOW= .1440E+01 BASIN STORAGE= .1398E-02 PERCENT ERROR=
.2
```

```
FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R13  MANE         2.00     14.11    274.00       .18      2.00     14.11    274.00         .18


CONTINUITY SUMMARY (AC-FT) - INFLOW= .8397E+00 EXCESS= .0000E+00 OUTFLOW= .8374E+00 BASIN STORAGE= .1363E-02 PERCENT ERROR=
.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R13  MANE         2.00      5.98    298.00       .09      2.00      5.98    298.00         .09


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4278E+00 EXCESS= .0000E+00 OUTFLOW= .4269E+00 BASIN STORAGE= .1430E-02 PERCENT ERROR=
-.1


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE3  MANE         2.00     25.27    280.00       .64      2.00     25.27    280.00         .64


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2812E+01 EXCESS= .0000E+00 OUTFLOW= .2813E+01 BASIN STORAGE= .6855E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE3  MANE         2.00     24.96    280.00       .64      2.00     24.96    280.00         .64


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2778E+01 EXCESS= .0000E+00 OUTFLOW= .2778E+01 BASIN STORAGE= .6825E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE3  MANE         2.00      9.97    282.00       .28      2.00      9.97    282.00         .28
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1227E+01 EXCESS= .0000E+00 OUTFLOW= .1227E+01 BASIN STORAGE= .6757E-03 PERCENT ERROR=
-.1


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE3  MANE         2.00      4.22    284.00       .14      2.00      4.22    284.00         .14


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5992E+00 EXCESS= .0000E+00 OUTFLOW= .5992E+00 BASIN STORAGE= .6713E-03 PERCENT ERROR=
-.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE3  MANE         2.00      1.29    288.00       .07      2.00      1.29    288.00         .07


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2869E+00 EXCESS= .0000E+00 OUTFLOW= .2869E+00 BASIN STORAGE= .6712E-03 PERCENT ERROR=
-.2


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R10  MANE         2.00     53.29    266.00       .62      2.00     53.29    266.00         .62


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4574E+01 EXCESS= .0000E+00 OUTFLOW= .4565E+01 BASIN STORAGE= .2060E-02 PERCENT ERROR=
.1


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R10  MANE         2.00     52.73    266.00       .62      2.00     52.73    266.00         .62


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4513E+01 EXCESS= .0000E+00 OUTFLOW= .4504E+01 BASIN STORAGE= .2051E-02 PERCENT ERROR=
.1


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
```

```
     R10  MANE        2.00     24.52    278.00       .29      2.00     24.52    278.00         .29


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2096E+01 EXCESS= .0000E+00 OUTFLOW= .2091E+01 BASIN STORAGE= .1717E-02 PERCENT ERROR=
.1


     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R10  MANE        2.00     13.40    290.00       .16      2.00     13.40    290.00         .16


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1152E+01 EXCESS= .0000E+00 OUTFLOW= .1150E+01 BASIN STORAGE= .1821E-02 PERCENT ERROR=
.1


     FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R10  MANE        2.00      6.03    314.00       .08      2.00      6.03    314.00         .08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6018E+00 EXCESS= .0000E+00 OUTFLOW= .6005E+00 BASIN STORAGE= .1827E-02 PERCENT ERROR=
-.1


     FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE4  MANE        2.00     10.89    276.00       .59      2.00     10.89    276.00         .59


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1256E+01 EXCESS= .0000E+00 OUTFLOW= .1257E+01 BASIN STORAGE= .1691E-03 PERCENT ERROR=
.0


     FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE4  MANE        2.00     10.74    276.00       .58      2.00     10.74    276.00         .58


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1239E+01 EXCESS= .0000E+00 OUTFLOW= .1239E+01 BASIN STORAGE= .1675E-03 PERCENT ERROR=
.0
```



```
     FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE4  MANE        2.00      3.54    278.00       .21      2.00      3.54    278.00         .21


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4515E+00 EXCESS= .0000E+00 OUTFLOW= .4515E+00 BASIN STORAGE= .1219E-03 PERCENT ERROR=
.0


     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE4  MANE        2.00      1.25    282.00       .09      2.00      1.25    282.00         .09


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1934E+00 EXCESS= .0000E+00 OUTFLOW= .1934E+00 BASIN STORAGE= .1158E-03 PERCENT ERROR=
-.1


     FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE4  MANE        2.00       .45    286.00       .05      2.00       .45    286.00         .05


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1050E+00 EXCESS= .0000E+00 OUTFLOW= .1050E+00 BASIN STORAGE= .1060E-03 PERCENT ERROR=
-.1


     FOR STORM = 1  STORM AREA (SQ MI) =        .01
      R9  MANE        1.62     43.15    255.24       .63      2.00     42.40    254.00         .63


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3100E+01 EXCESS= .0000E+00 OUTFLOW= .3101E+01 BASIN STORAGE= .7915E-04 PERCENT ERROR=
.0


     FOR STORM = 2  STORM AREA (SQ MI) =        .50
      R9  MANE        1.62     41.98    254.43       .62      2.00     41.09    256.00         .62
```

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3051E+01 EXCESS= .0000E+00 OUTFLOW= .3052E+01 BASIN STORAGE= .8972E-04 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R9  MANE         2.00     21.71    264.00       .30      2.00     21.71    264.00         .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1470E+01 EXCESS= .0000E+00 OUTFLOW= .1471E+01 BASIN STORAGE= .7899E-04 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R9  MANE         2.00     12.14    276.00       .18      2.00     12.14    276.00         .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8818E+00 EXCESS= .0000E+00 OUTFLOW= .8822E+00 BASIN STORAGE= .7919E-04 PERCENT ERROR=
.0

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R9  MANE         2.00      5.57    300.00       .11      2.00      5.57    300.00         .11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5188E+00 EXCESS= .0000E+00 OUTFLOW= .5191E+00 BASIN STORAGE= .7764E-04 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R7  MANE         2.00     43.65    258.00       .62      2.00     43.65    258.00         .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3964E+01 EXCESS= .0000E+00 OUTFLOW= .3966E+01 BASIN STORAGE= .1248E-03 PERCENT ERROR=
-.1
```



```
          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R7  MANE         2.00     45.14    258.00       .61      2.00     45.14    258.00         .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3900E+01 EXCESS= .0000E+00 OUTFLOW= .3902E+01 BASIN STORAGE= .1284E-03 PERCENT ERROR=
-.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R7  MANE         2.00     23.45    268.00       .30      2.00     23.45    268.00         .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1919E+01 EXCESS= .0000E+00 OUTFLOW= .1920E+01 BASIN STORAGE= .1220E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R7  MANE         2.00     13.11    280.00       .18      2.00     13.11    280.00         .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1147E+01 EXCESS= .0000E+00 OUTFLOW= .1148E+01 BASIN STORAGE= .1276E-03 PERCENT ERROR=
.0

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R7  MANE         2.00      6.18    304.00       .10      2.00      6.18    304.00         .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6276E+00 EXCESS= .0000E+00 OUTFLOW= .6278E+00 BASIN STORAGE= .1251E-03 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
              RS1  MANE         2.00    719.21    322.00       .79      2.00    719.21    322.00         .79
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1236E+03 EXCESS= .0000E+00 OUTFLOW= .1236E+03 BASIN STORAGE= .3686E-02 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RS1	MANE	2.00	709.59	322.00	.78	2.00	709.59	322.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1221E+03 EXCESS= .0000E+00 OUTFLOW= .1221E+03 BASIN STORAGE= .3679E-02 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RS1	MANE	2.00	478.60	336.00	.56	2.00	478.60	336.00	.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8763E+02 EXCESS= .0000E+00 OUTFLOW= .8763E+02 BASIN STORAGE= .3620E-02 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RS1	MANE	2.00	345.22	348.00	.42	2.00	345.22	348.00	.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6592E+02 EXCESS= .0000E+00 OUTFLOW= .6592E+02 BASIN STORAGE= .3610E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS1	MANE	2.00	210.32	368.00	.28	2.00	210.32	368.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4449E+02 EXCESS= .0000E+00 OUTFLOW= .4450E+02 BASIN STORAGE= .3611E-02 PERCENT ERROR= .0

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

RS2	MANE	1.02	719.11	322.18	.79	2.00	719.06	322.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1242E+03 BASIN STORAGE= .5490E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RS2	MANE	1.03	709.34	322.51	.78	2.00	709.25	322.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1227E+03 EXCESS= .0000E+00 OUTFLOW= .1227E+03 BASIN STORAGE= .5476E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RS2	MANE	1.16	478.54	337.90	.56	2.00	478.50	338.00	.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8800E+02 EXCESS= .0000E+00 OUTFLOW= .8800E+02 BASIN STORAGE= .5378E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RS2	MANE	1.29	345.03	348.39	.42	2.00	344.79	348.00	.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6613E+02 EXCESS= .0000E+00 OUTFLOW= .6613E+02 BASIN STORAGE= .5506E-03 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS2	MANE	1.50	210.31	370.54	.28	2.00	210.29	370.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4456E+02 EXCESS= .0000E+00 OUTFLOW= .4456E+02 BASIN STORAGE= .5417E-03 PERCENT ERROR= .0

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

RHV2	MANE	2.00	3.17	324.00	.87	2.00	3.17	324.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1441E+01 EXCESS= .0000E+00 OUTFLOW= .1441E+01 BASIN STORAGE= .5691E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RHV2	MANE	2.00	3.14	324.00	.86	2.00	3.14	324.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1429E+01 EXCESS= .0000E+00 OUTFLOW= .1429E+01 BASIN STORAGE= .5643E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RHV2	MANE	2.00	2.29	326.00	.66	2.00	2.29	326.00	.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1083E+01 EXCESS= .0000E+00 OUTFLOW= .1083E+01 BASIN STORAGE= .5953E-03 PERCENT ERROR= -.1

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RHV2	MANE	2.00	1.74	334.00	.52	2.00	1.74	334.00	.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8660E+00 EXCESS= .0000E+00 OUTFLOW= .8660E+00 BASIN STORAGE= .5721E-03 PERCENT ERROR= -.1

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RHV2	MANE	2.00	1.25	342.00	.40	2.00	1.25	342.00	.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6627E+00 EXCESS= .0000E+00 OUTFLOW= .6627E+00 BASIN STORAGE= .5814E-03 PERCENT ERROR= -.1

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

Appendix H

Baseline Existing Conditions
100 Year-6 Hour HEC-1 Output

```
1****************************************
****************************************
 *                                      *                                                    *
  *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *   U.S. ARMY CORPS OF ENGINEERS
  *
 *              JUN   1998              *                                                    *   HYDROLOGIC ENGINEERING
CENTER    *
 *            VERSION 4.1               *                                                    *         609 SECOND STREET
  *
 *                                      *                                                    *      DAVIS, CALIFORNIA 95616
  *
 *  RUN DATE   02JUN10  TIME  13:42:04  *                                                    *          (916) 756-1104
  *
 *                                      *                                                    *
  *
 ****************************************
****************************************
```

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

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

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

```
1                                                HEC-1 INPUT                                                          PAGE  1

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

        1           ID   Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 100 Years
        2           ID                                                                                  **
        3           ID   107th Avenue and Union Hills Drive Design Concept Report                       **
        4           ID                                                                          **

        5           ID   PROJECT NO.: FCD 2009C036                        G&M: 10388A                  **

        6           ID                                                                          **

        7           ID   Original HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                  **
        8           ID                          100-Year 6-Hour HEC-1 Model for Existing Conditions **
        9           ID   Modified HEC-1 Model: BASE100-6.DAT, Goodwin & Marshall, Inc., May29, 2010**
       10           ID                          100-Year 6-Hour HEC-1 Model for Existing Conditions **
       11           ID                                                                          **

       12           ID   1) NOAA2 Rainfall Data                                                 **
```



```
       13           ID   2) DDMSW V3.5.7 Used                                                    **

       14           ID                                                                          **

       15           ID   ****************************************************************************
       16           ID   Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 100 Years
       17           ID                                                                                  **
       18           ID   Glendale/Peoria ADMP Northwest Region Update                                   **
       19           ID   Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                  **
       20           ID                          REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS              **
       21           ID   Modified HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                   **
       22           ID                          100-Year 6-Hour HEC-1 Model for Existing Conditions **
       23           ID   1) NOAA 2 Rainfall Data                                                        **
       24           ID   2) DDMSW MCUHP1 V3.3.2 Used                                                    **
       25           ID                                                                                  **
       26           ID   ****************************************************************************
                    *
       27           ID   ********************************************************************************
       28           ID   **                                                                            **
       29           ID   ** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS        **
       30           ID   ** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                   **
       31           ID   ** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005             **
       32           ID   ** THIS IS THE PREFERRED ALTERNATIVE MODEL                                    **
       33           ID   ** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS              **
       34           ID   ** USING LATEST SURVEY DATA.                                                  **
       35           ID   ********************************************************************************
                    *
       36           ID   ********************************************************************************
       37           ID   **                                                                            **
       38           ID   **                      Glendale/Peoria ADMP Update                           **
       39           ID   **                                                                            **
       40           ID   ********************************************************************************
       41           ID   ********************************************************************************
       42           ID   PROJECT:                Glendale Peoria ADMP Update
       43           ID   CLIENT:                 Flood Control District of Maricopa County
       44           ID   PREPARED BY:            Entellus, Inc.
       45           ID   PROJECT No:             FCD 99-44                 Entellus 310.017
       46           ID   FILE NAME: LEVEL3.DAT                   CREATED DATE: JUNE 6, 2001
       47           ID   STORM:                  100-year 6-hour Storm
       48           ID   DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY
       49           ID
                    *
                    * ******************************************************************************
       50           IT       2                    1000
       51           IO       5
1                                                HEC-1 INPUT                                                          PAGE  2

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

       52           IN      15
                    *
                    *DIAGRAM
                    *
       53           JD    3.20    0.01
       54           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       55           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       56           PC   0.962   0.972   0.983   0.991   1.000
       57           JD   3.179    0.50
       58           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
       59           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
       60           PC   0.962   0.972   0.983   0.991   1.000
       61           JD   3.120    2.80
       62           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
       63           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
```

```
 64          PC   0.950   0.963   0.975   0.988   1.000
 65          JD   2.950    16.0
 66          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 67          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 68          PC   0.946   0.960   0.973   0.987   1.000
 69          JD   2.598    90.0
 70          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 71          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 72          PC   0.927   0.945   0.964   0.982   1.000
             *
             * ******************************************************************************
             *
             * The Following Portion Came from the HEC-1 Model for the Tierra Del Rio
             * Development.  Model CREATED BY A. MERCIER, CMX, ON 01/16/04
             * FILE NAME: TDR6DC.DAT
             *
             * ******************************************************************************
             *

 73          KK     CBA   BASIN
 74          BA   0.007
 75          KM   SUB-BASIN CBA
 76          LG    0.34    0.35    6.80    0.13      11
 77          UC   0.182   0.219
 78          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 79          UA     100
             *

 80          KK    RCBA
 81          KM   CHANNEL ROUTING
 82          RD    1479   .0095    .030            TRAP       0       4
             *

 83          KK     P28   BASIN
 84          KM   SUB-BASIN P28
 85          BA   0.027
 86          LG    0.25    0.13   10.10    0.04      29
 87          UC   0.337   0.331
 88          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 89          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  3
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 90          KK    CP28
 91          KM
 92          HC       2
             *

 93          KK    DT28
 94          KM
 95          DT    DB28   1.230
 96          DI       0     100     500    1000    5000
 97          DQ       0     100     500    1000    5000
             *

 98          KK     CBB   BASIN
 99          KM   SUB-BASIN CBB
100          BA   0.017
101          LG    0.34    0.34    4.55    0.35      15
102          UC   0.195   0.156
103          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
104          UA     100
             *

105          KK    RCBB
106          KM   CHANNEL ROUTING
107          RD    1231   .0244    .030            TRAP       0       4
             *

108          KK   CP28a
109          KM
110          HC       2
             *

111          KK    R28a
112          KM   CHANNEL ROUTING
113          RD    1642   .0018    .030            TRAP      10       4
             *

114          KK     P27   BASIN
115          KM   SUB-BASIN P27
116          BA   0.065
117          LG    0.25    0.15    8.00    0.10      30
118          UC   0.423   0.443
119          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
120          UA     100
             *

121          KK    DT27
122          KM
123          DT    DB27   1.360
124          DI       0     100     500    1000    5000
125          DQ       0     100     500    1000    5000
             *
1                                          HEC-1 INPUT                                          PAGE  4
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

126          KK    CP27
127          KM
128          HC       2
             *

129          KK    P27A   BASIN
130          KM   SUB-BASIN P27A
131          BA   0.008
132          LG    0.25    0.25    4.35    0.46      44
133          UC   0.235   0.295
134          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
135          UA     100
             *

136          KK   DT27a
137          KM
138          DT   DB27a   0.210
139          DI       0     100     500    1000    5000
140          DQ       0     100     500    1000    5000
             *

141          KK    P27B   BASIN
142          KM   SUB-BASIN P27B
143          BA   0.013
144          LG    0.26    0.26    5.00    0.32      37
145          UC   0.260   0.346
```

```
146          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
147          UA     100
             *

148          KK   DT27b
149          KM
150          DT   DB27b   0.250
151          DI       0     100     500    1000    5000
152          DQ       0     100     500    1000    5000
             *

153          KK     CBL   BASIN
154          KM  SUB-BASIN CBL
155          BA   0.028
156          LG    0.28    0.29    5.70    0.23      24
157          UC   0.276   0.301
158          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
159          UA     100
             *

160          KK    CCBL
161          KM
162          HC       4
             *
```



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

163          KK    RCBL
164          KM  NATURAL WASH ROUTING
165          RC   0.035   0.035   0.035     840   .0227
166          RX       0     7.5      15      50      60      95   102.5     110
167          RY       5     2.5       0       0       0       0     2.5       5
             *

168          KK     CBK   BASIN
169          KM  SUB-BASIN CBK
170          BA   0.052
171          LG    0.34    0.34    4.65    0.33       6
172          UC   0.277   0.207
173          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
174          UA     100
             *

175          KK    CCBK
176          KM
177          HC       2
             *

178          KK    RCBK
179          KM  CHANNEL ROUTING
180          RD     755   .0238    .030            TRAP      10       4
             *

181          KK     P14   BASIN
182          KM  SUB-BASIN P14
183          BA   0.008
184          LG    0.34    0.34    3.81    0.53       2
185          UC   0.234   0.183
186          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
187          UA     100
             *
```



```
188          KK    RT14
189          KM
190          DT    RB14   1.130
191          DI       0     100     500    1000    5000
192          DQ       0     100     500    1000    5000
             *

193          KK    CP14
194          KM
195          HC       2
             *

196          KK     P15   BASIN
197          KM  SUB-BASIN P15
198          BA   0.006
199          LG    0.33    0.34    3.23    0.81       5
200          UC   0.436   0.564
201          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
202          UA     100
             *
```



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

203          KK    DT15
204          KM
205          DT    DB15   0.260
206          DI       0     100     500    1000    5000
207          DQ       0     100     500    1000    5000
             *

208          KK     CBJ   BASIN
209          KM  SUB-BASIN CBJ
210          BA   0.015
211          LG    0.35    0.35    4.30    0.41      10
212          UC   0.227   0.241
213          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
214          UA     100
             *

215          KK    CP15
216          KM
217          HC       3
             *

218          KK     R15
219          KM  CHANNEL ROUTING
220          RD     800   .0125    .030            TRAP      10       4
             *

221          KK     CBH   BASIN
222          KM  SUB-BASIN CBH
223          BA   0.012
224          LG    0.35    0.35    4.40    0.38      15
225          UC   0.156   0.100
226          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
227          UA     100
             *
             * Route CBH to P25S
             *

228          KK    RCBH
229          RS       2    FLOW       0
```

```
230          RC    0.02     .02     .02    1500   .0055
231          RX     280     320     340     350     360     370     390     430
232          RY       6       4       2       0       0       2       4       6
             *

233          KK    P25S   BASIN
234          KM  SUB-BASIN P25S
235          BA   0.028
236          LG    0.35    0.35    4.35    0.40      15
237          UC   0.480   0.415
238          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
239          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  7
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

240          KK   CP25S
241          KM
242          HC       2
             *

243          KK    AFR0
244          KM  Dummy Combination at Jomax Road and AFR
245          HC       2
             *
             * ***********************************************************************

246          KK      E1   BASIN
247          KM  SUB-BASIN E1
248          BA   0.014
249          LG    0.33    0.32    3.95    0.48       2
250          UC   0.205   0.142
251          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
252          UA     100
             *

253          KK     RE1
254          KM  CHANNEL ROUTING
255          RD    1993   .0376    .030            TRAP      10       4
             *

256          KK      E2   BASIN
257          KM  SUB-BASIN E2
258          BA   0.016
259          LG    0.30    0.25    3.95    0.48       5
260          UC   0.288   0.271
261          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
262          UA     100
             *

263          KK     RE2
264          KM  CHANNEL ROUTING
265          RD    1108   .0542    .030            TRAP      10       4
             *

266          KK     P13   BASIN
267          KM  SUB-BASIN P13
268          BA   0.059
269          LG    0.26    0.25    3.92    0.57      27
270          UC   0.313   0.195
271          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
272          UA     100
```



```
             *

273          KK    DT13
274          KM
275          DT    DB13   1.060
276          DI       0     100     500    1000    5000
277          DQ       0     100     500    1000    5000
             *
1                                          HEC-1 INPUT                                          PAGE  8
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

278          KK    CP13
279          KM
280          HC       3
             *

281          KK     R13
282          KM  CHANNEL ROUTING
283          RD    1412   .0035    .025            TRAP      10       4
             *

284          KK     P12   BASIN
285          KM  SUB-BASIN P12
286          BA   0.044
287          LG    0.25    0.26    3.58    0.71      30
288          UC   0.426   0.316
289          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
290          UA     100
             *

291          KK    DT12
292          KM
293          DT    DB12   1.140
294          DI       0     100     500    1000    5000
295          DQ       0     100     500    1000    5000
             *

296          KK    CP12
297          KM
298          HC       2
             *

299          KK      E3   BASIN
300          KM  SUB-BASIN E3
301          BA   0.082
302          LG    0.31    0.28    3.95    0.48       4
303          UC   0.589   0.591
304          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
305          UA     100
             *

306          KK     RE3
307          KM  CHANNEL ROUTING
308          RD    1473   .0339    .030            TRAP      10       4
             *

309          KK     P10   BASIN
310          KM  SUB-BASIN P10
311          BA   0.055
312          LG    0.25    0.26    3.78    0.63      29
313          UC   0.409   0.251
314          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
 315          UA     100
              *
1                                        HEC-1 INPUT                                                    PAGE  9

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

 316          KK    DT10
 317          KM
 318          DT    DB10   1.080
 319          DI       0     100     500    1000    5000
 320          DQ       0     100     500    1000    5000
              *

 321          KK    CP10
 322          KM
 323          HC       2
              *

 324          KK     R10
 325          KM  CHANNEL ROUTING
 326          RD    1947   .0035    .025            TRAP      10       4
              *

 327          KK     P11   BASIN
 328          KM  SUB-BASIN P11
 329          BA   0.042
 330          LG    0.25    0.25    3.85    0.60      30
 331          UC   0.671   0.682
 332          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 333          UA     100
              *

 334          KK    DT11
 335          KM
 336          DT    DB11   1.200
 337          DI       0     100     500    1000    5000
 338          DQ       0     100     500    1000    5000
              *

 339          KK    CP11
 340          KM
 341          HC       2
              *

 342          KK      E4   BASIN
 343          KM  SUB-BASIN E4
 344          BA   0.040
 345          LG    0.34    0.33    4.00    0.47       3
 346          UC   0.528   0.655
 347          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 348          UA     100
              *

 349          KK     RE4
 350          KM  CHANNEL ROUTING
 351          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 352          RD
 353          RC    .015    .015    .015    1287   .0250
 354          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 355          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *
1                                        HEC-1 INPUT                                                    PAGE 10
```



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

 356          KK      P9   BASIN
 357          KM  SUB-BASIN P9
 358          BA   0.045
 359          LG    0.25    0.25    3.92    0.57      30
 360          UC   0.315   0.283
 361          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 362          UA     100
              *

 363          KK     DT9
 364          KM
 365          DT     DB9   0.920
 366          DI       0     100     500    1000    5000
 367          DQ       0     100     500    1000    5000
              *

 368          KK     HV1   BASIN
 369          KM  SUB-BASIN HV1
 370          BA   0.007
 371          LG    0.27    0.29    3.95    0.55      25
 372          UC   0.410   0.888
 373          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 374          UA     100
              *

 375          KK     CP9
 376          KM
 377          HC       3
              *

 378          KK      R9
 379          KM  CHANNEL ROUTING
 380          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 381          RD
 382          RC    .015    .015    .015     940   .0250
 383          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 384          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *

 385          KK      P8   BASIN
 386          KM  SUB-BASIN P8
 387          BA   0.013
 388          LG    0.25    0.25    4.15    0.52      30
 389          UC   0.508   0.595
 390          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 391          UA     100
              *

 392          KK     DT8
 393          KM
 394          DT     DB8   0.300
 395          DI       0     100     500    1000    5000
 396          DQ       0     100     500    1000    5000
              *
1                                        HEC-1 INPUT                                                    PAGE 11

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

 397          KK      P7   BASIN
 398          KM  SUB-BASIN P7
```

```
399          BA   0.014
400          LG    0.25    0.25    3.95    0.56      30
401          UC   0.458   0.528
402          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
403          UA     100
             *

404          KK     DT7
405          KM
406          DT     DB7   0.300
407          DI       0     100     500    1000    5000
408          DQ       0     100     500    1000    5000
             *

409          KK     CP7
410          KM
411          HC       3
             *

412          KK      R7
413          KM  CHANNEL ROUTING
414          RD
415          RC    .015    .015    .015    1488   .0250
416          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
417          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
             *

418          KK      P6   BASIN
419          KM  SUB-BASIN P6
420          BA   0.070
421          LG    0.25    0.25    4.25    0.49      30
422          UC   0.899   1.126
423          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
424          UA     100
             *

425          KK     DT6
426          KM
427          DT     DB6   1.760
428          DI       0     100     500    1000    5000
429          DQ       0     100     500    1000    5000
             *

430          KK     CP6
431          KM
432          HC       2
             *
```



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

433          KK   HPVLY
434          KM
435          HC       3
             *
             *
             * ******************************************************************************
             *
             *

436          KK   A11MA   BASIN
437          KM  SUB-BASIN A11M North Portion
438          BA   0.073
```



```
439          LG    0.32    0.24    8.80    0.06       8
440          UC   0.258   0.117
441          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
442          UA     100
             *
             * On-site Retention Basin
             *

443          KK  A11MAQ
444          DT  DA11MA     3.4
445          DI       0     100    1000    1000
446          DQ       0     100    1000    1000
             *
             *
             *

447          KK  SA11MA STORAGE
448          KM  Online Detention Basin,  6.2 ac-ft.
449          RS       1    STOR       0
450          SV       0     1.5     2.5     4.0     6.2    10.0
451          SE       0       2       3       4       5       6
452          SL       0    3.14    0.62     0.5
453          SS       5      50     2.7     1.5
             *
             * ROUTE RA11MA IS 2000 FT WITH A SLOPE OF .0092
             * CROSS SECTION IS A SMALL NATURAL CHANNEL
             *

454          KK  RA11MA
455          RS       9    FLOW       0
456          RC    0.05    0.06    0.05    2000   .0092
457          RX       0     350     450     480     482     510     610     910
458          RY       7       6       5       1       0       5       6       7
             *

459          KK   A11MB   BASIN
460          KM  SUB-BASIN A11M South Portion
461          BA   0.194
462          LG    0.25    0.15    8.80    0.07      29
463          UC   0.393   0.167
464          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
465          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

466          KK  A11MBQ
467          DT  DA11MB     3.6
468          DI       0     100    1000    1000
469          DQ       0     100    1000    1000
             *

470          KK  SA11MB STORAGE
471          KM  Online Detention Basin, 11.2 ac-ft.
472          RS       1    STOR       0
473          SV       0     3.0     5.5     8.0    11.2    15.0
474          SE       0       2       3       4       5       6
475          SL       0    3.14    0.62     0.5
476          SS       5     200     2.7     1.5
             *
```

```
477     KK   A11NA   BASIN
478     KM  SUB-BASIN A11N - Revised
479     BA   0.076
480     LG    0.29    0.30    5.40    0.25      26
481     UC   0.237   0.134
482     UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
483     UA     100
        *

484     KK  SA11NA STORAGE
485     KM  Online Detention Basin,  7.3 ac-ft.
486     RS       1    STOR       0
487     SV       0     1.0     3.0     5.0     7.3    11.0
488     SE       0       2       3       4       5       6
489     SL       0    3.14    0.62     0.5
490     SS       5     100     2.7     1.5
        *

491     KK  RA11NA
492     RS      11    FLOW       0
493     RC    0.05    0.06    0.05    2400  0.0090
494     RX       0     350     450     480     482     510     610     910
495     RY       7       6       5       1       0       5       6       7
        *
        * COMBINE Flows of A11NA, A11MA AND A11MB
        *

496     KK  CA11MB
497     HC       3
        *
        * Route Flow to A11J
        *

498     KK  RA11MB
499     RS       8    FLOW       0
500     RC    0.05    0.06    0.05    3000   .0085
501     RX       0     350     450     480     482     510     610     910
502     RY       7       6       5       1       0       5       6       7
        *
```



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

503     KK    A11O   BASIN
504     KM  SUBASIN A11O
505     BA   0.056
506     LG    0.28    0.27    6.20    0.19      23
507     UC   0.279   0.249
508     UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
509     UA     100
        *

510     KK   SA11O STORAGE
511     KM  Online Detention Basin,  3.1 ac-ft.
512     RS       1    STOR       0
513     SV       0     0.5     1.0     2.0     3.1     5.0
514     SE       0       2       3       4       5       6
515     SL       0    3.14    0.62     0.5
516     SS       5      50     2.7     1.5
        *
        * ROUTE A11O to A11KB
        *
```



```
517     KK   RA11O
518     RS       9    FLOW       0
519     RC    0.05     .06     .05    2500   .0085
520     RX       0     350     450     480     482     510     610     910
521     RY       7       6       5       1       0       5       6       7
        *

522     KK   A11KB   BASIN
523     KM  SUB-BASIN A11K North Portion
524     BA   0.107
525     LG    0.25    0.25    4.70    0.36      30
526     UC   0.390   0.206
527     UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
528     UA     100
        *

529     KK  SA11KB STORAGE
530     KM  Online Detention Basin, 10.7 ac-ft.
531     RS       1    STOR       0
532     SV       0     3.0     5.0     7.0    10.7    15.0
533     SE       0       2       3       4       5       6
534     SL       0    3.14    0.62     0.5
535     SS       5     100     2.7     1.5
        *

536     KK   A11KA   BASIN
537     KM  SUB-BASIN A11K East Portion
538     BA   0.081
539     LG    0.27    0.27    4.45    0.42      42
540     UC   0.272   0.190
541     UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
542     UA     100
        *
```



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

543     KK  SA11KA STORAGE
544     KM  Online Detention Basin,  9.6 ac-ft.
545     RS       1    STOR       0
546     SV       0     2.0     4.0     6.0     9.6    14.0
547     SE       0       2       3       4       5       6
548     SL       0    3.14    0.62     0.5
549     SS       5      50     2.7     1.5
        *
        * ROUTE A11KA to A11KB
        *

550     KK  RA11KA
551     RS       8    FLOW       0
552     RC    0.05     .06     .05    2000   .0075
553     RX       0     350     450     480     482     510     610     910
554     RY       7       6       5       1       0       5       6       7
        *
        * COMBINE A11KB,A11KA AND A11O
        *

555     KK  CA11KB
556     HC       3
        *
        * ROUTE Flow of CA11KB to A11KC
        *
```

```
557          KK  RA11KB
558          RS       8    FLOW      0
559          RC    0.05    0.06    0.05    1600  0.0055
560          RX       0      50     250     350     360     420     620     720
561          RY      10       8       6       2       0       6       8      10
             *

562          KK    A11G   BASIN
563          KM  SUB-BASIN A11G
564          BA   0.060
565          LG    0.31    0.28    4.55    0.35      25
566          UC   0.425   0.369
567          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
568          UA     100
             *
             * ROUTE A11G to A11KC
             *

569          KK  RA11GN
570          RS       7    FLOW      0
571          RC    0.05     .06     .05    2300   0.010
572          RX       0     350     450     480     482     510     610     910
573          RY       7       6       5       1       0       5       6       7
             *
```



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

574          KK   A11KC   BASIN
575          KM  SUB-BASIN A11K West Portion
576          BA   0.132
577          LG    0.27    0.26    4.15    0.50      27
578          UC   0.381   0.185
579          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
580          UA     100
             *

581          KK  SA11KC STORAGE
582          KM  Online Detention Basin,  6.4 ac-ft.
583          RS       1    STOR      0
584          SV       0     1.5     2.5     4.0     6.4    10.0
585          SE       0       2       3       4       5       6
586          SL       0    3.14    0.62     0.5
587          SS       5      50     2.7     1.5
             *
             * COMBINE RA11KB, RA11G, AND A11KC
             *

588          KK  CA11KC
589          HC       3
             *
             * ROUTE CA11KC to A11J
             * CROSS SECTION IS A MEDIUM NATURAL CHANNEL
             *

590          KK  RA11KC
591          RS       4    FLOW      0
592          RC    0.05     .06     .05    1000   .0055
593          RX       0      50     250     350     360     420     620     720
594          RY      10       8       6       2       0       6       8      10
             *
```



```
595          KK    A11J   BASIN
596          KM  SUB-BASIN A11J
597          BA   0.112
598          LG    0.29    0.22    7.30    0.12      18
599          UC   0.579   0.448
600          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
601          UA     100
             *

602          KK   SA11J STORAGE
603          KM  Online Detention Basin,  4.4 ac-ft.
604          RS       1    STOR      0
605          SV       0     1.0     2.0     3.0     4.4     7.0
606          SE       0       2       3       4       5       6
607          SL       0    3.14    0.62     0.5
608          SS       5      50     2.7     1.5
             *
             * COMBINE Flows of RA11MB, A11J, AND RA11KC
             *
```



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

609          KK   CA11J
610          HC       3
             *

611          KK    A11L   BASIN
612          KM  SUB-BASIN A11L
613          BA   0.264
614          LG    0.27    0.12   11.20    0.03      24
615          UC   0.704   0.514
616          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
617          UA     100
             *
             * On-site Retention Basin
             *     GP

618          KK  DA11LQ
619          DT   DA11L     7.6
620          DI       0     100    1000    1000
621          DQ       0     100    1000    1000
             *
             * ROUTE FLOW TO A11I FROM A11L                                                    G
             *

622          KK   RA11L
623          RS       9    FLOW      0
624          RC    0.05    0.06    0.05    2600   .0069
625          RX       0     350     450     480     482     510     610     910
626          RY       7       6       5       1       0       5       6       7
             *

627          KK    A11I   BASIN
628          KM  SUB-BASIN A11I
629          BA   0.153
630          LG    0.25    0.10   11.20    0.03      28
631          UC   0.516   0.325
632          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
633          UA     100
             *
             * On-site Retention Basin
             *
```

```
634          KK  DA11IQ
635          DT   DA11I     11.7
636          DI       0      100     1000     1000
637          DQ       0      100     1000     1000
             *
             * COMBINE Flows of CA11J, A11I, and RA11L
             *
1                                    HEC-1 INPUT                                                    PAGE 18

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

638          KK   CA11I
639          HC       3
             *
             * ROUTE FLOW TO A11EB FROM CA11I
             *

640          KK   RA11I
641          RS       9    FLOW       0
642          RC    0.05     .06      .05     4000    .0075
643          RX       0      50      100      150      180      230      280      330
644          RY      10       8        6        0        0        6        8       10
             *

645          KK   A11EA   BASIN
646          KM  SUB-BASIN A11E East Portion
647          BA   0.144
648          LG    0.33    0.31     4.30     0.41       11
649          UC   0.596   0.537
650          UA       0     4.5     12.6     23.2     35.8     50.0     64.2     76.8     87.4     95.5
651          UA     100
             *
             * ROUTE FLOW TO A11EB FROM A11EA
             *

652          KK  RA11EA
653          RS       6    FLOW       0
654          RC    0.05     .06      .05     1500    .0065
655          RX       0      50      250      320      360      420      620      720
656          RY      10       8        6        0        0        6        8       10
             *

657          KK   A11EB   BASIN
658          KM  SUB-BASIN A11E West Portion
659          BA   0.190
660          LG    0.34    0.34     4.45     0.38        4
661          UC   0.834   0.835
662          UA       0     4.5     12.6     23.2     35.8     50.0     64.2     76.8     87.4     95.5
663          UA     100
             *
             * COMBINE Flows of A11EA, A11EB, and RA11I
             *

664          KK  CA11EB
665          HC       3
             *

666          KK      41   BASIN
667          KM  SUB-BASIN 41
668          BA   0.054
669          LG    0.34    0.34     4.40     0.39       21
670          UC   0.249   0.168
```



```
671          UA       0     3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
672          UA     100
             *
1                                    HEC-1 INPUT                                                    PAGE 19

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

673          KK     B41
674          KM  Storage Route Runoff through Detention Basin @41
675          KM  Outlet Structure:  1-48" PIPE
676          RS       1    STOR       0
677          SA     .09     .18      .27       .4
678          SE    1433    1435     1437     1440
679          SQ       0      23       71      132
             *

680          KK      42   BASIN
681          KM  SUB-BASIN 42
682          BA   0.075
683          LG    0.35    0.35     4.25     0.42       44
684          UC   0.259   0.180
685          UA       0     3.0      5.0      8.0     12.0     20.0     43.0     75.0     90.0     96.0
686          UA     100
             *

687          KK     B42
688          KM  Storage Route Runoff through Detention Basin @42
689          KM  Outlet Structure:  48" PIPE
690          RS       1    STOR       0
691          SA     .07     .13      .21      .31       .4
692          SE    1427    1429     1431     1433     1435
693          SQ       0      23       71      112      147
             *
             * COMBINE Flows of 41 and 42                                                            G
             *

694          KK     C41
695          HC       2
             *
             * ROUTE FLOW TO A11F FROM C41
             *

696          KK    RC41
697          RS      14    FLOW       0
698          RC    0.05     .06      .05     5200    .0075
699          RX       0      50       70       90      110      130      150      200
700          RY       6       5        3        0        0        3        5        6
             *

701          KK    A11F   BASIN
702          KM  SUB-BASIN A11F
703          BA   0.334
704          LG    0.33    0.31     4.35     0.40        8
705          UC   0.624   0.419
706          UA       0     4.5     12.6     23.2     35.8     50.0     64.2     76.8     87.4     95.5
707          UA     100
             *
             * COMBINE Flows of A11F and RC41                                                        G
             *
1                                    HEC-1 INPUT                                                    PAGE 20

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

```
708          KK   CA11F
709          HC       2
             *
             * COMBINE Flows of CA11F and CA11EB
             *

710          KK   CA11E
711          HC       2
             *
             * ROUTE FLOW TO A11A FROM CA11E
             *

712          KK   RA11E
713          RS       3    FLOW       0
714          RC    0.05     .06     .05    1700   .0070
715          RX       0      50      70      90     110     130     150     200
716          RY       6       5       3       0       0       3       5       6
             *

717          KK    A09U   BASIN
718          KM  SUB-BASIN A09U
719          BA   0.175
720          LG    0.32    0.30    4.20    0.43      22
721          UC   0.347   0.227
722          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
723          UA     100
             *
             * Happy Valley RD. Improvements
             * 0 % FLOW GOES DOWN to South,100% WEST along HAPPY VALLEY
             *

724          KK   DA09U
725          DT   A09UI     0.0     0.0
726          DI     0.0    10.0   100.0  1000.0  5000.0     0.0     0.0     0.0     0.0     0.0
727          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CA09T FROM A09U                                                    G
             *

728          KK  RA09UW
729          RS       9    FLOW       0
730          RC    0.05    0.03     .05    4000   .0075
731          RX       0     200     210     220     240     270     295     595
732          RY     4.5       2       0       2       3       3     3.5     4.5
             *

733          KK    A09T   BASIN
734          KM  SUB-BASIN A09T
735          BA   0.182
736          LG    0.33    0.31    4.30    0.41       2
737          UC   0.551   0.388
738          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
739          UA     100
             *
             * COMBINE  CA09U AND A09T
             *
```



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

740          KK   CA09T
741          HC       2
```



```
             *
             * HAPPY VALLEY ROAD Improvements, 100% Flow TO THE WEST
             *

742          KK   DA09T
743          DT   A09TI     0.0     0.0
744          DI     0.0    10.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0
745          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CX22 FROM CA09T
             *

746          KK  RA09TW
747          RS       2    FLOW       0
748          RC    0.05    0.03    0.05    1500   .0025
749          RX       0     200     210     220     230     270     295     595
750          RY       6       4       0       0       4       4     5.5       7
             *

751          KK    A11A   BASIN
752          KM  SUB-BASIN A11A
753          BA   0.298
754          LG    0.23    0.29    6.00    0.21      34
755          UC   0.568   0.362
756          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
757          UA     100
             *
             * On-site Retention Basin
             *     GP

758          KK  DA11AQ
759          DT   DA11A     7.7
760          DI       0     100    1000    1000
761          DQ       0     100    1000    1000
             *
             * Combine  Flows of RA09TW, CA11E,and A11A
             *

762          KK    CX23
763          HC       3
             *
             * ROUTE FLOW TO CS1 FROM CX23                                                       GP
             *

764          KK    RX23
765          RS       7    FLOW       0
766          RC    0.05     .06     .05    4000   .0074
767          RX       0      50     150     175     275     300     400     500
768          RY      12       8       6       0       0       6       8      12
             *
```



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

769          KK      S1   BASIN
770          KM  SUB-BASIN S1
771          BA   0.124
772          LG    0.31    0.27    4.25    0.47      12
773          UC   0.597   0.527
774          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
775          UA     100
             *
```

```
776          KK      P2   BASIN
777          KM  SUB-BASIN P2
778          BA   0.051
779          LG    0.25    0.25    4.45    0.43      29
780          UC   0.316   0.203
781          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
782          UA     100
             *

783          KK     RT2
784          KM
785          DT     RB2   4.740
786          DI       0     100     500    1000    5000
787          DQ       0     100     500    1000    5000
             *

788          KK     CS1
789          KM
790          HC       3
             *

791          KK     RS1
792          KM  CHANNEL ROUTING
793          RD     924   .0108    .035            TRAP     200       6
             *

794          KK      S2   BASIN
795          KM  SUB-BASIN S2
796          BA   0.012
797          LG    0.34    0.33    4.70    0.32       3
798          UC   0.198   0.111
799          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
800          UA     100
             *

801          KK      S3   BASIN
802          KM  SUB-BASIN S3
803          BA   0.006
804          LG    0.30    0.25    4.65    0.32       5
805          UC   0.154   0.090
806          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
807          UA     100
             *
```



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

808          KK     CS2
809          KM
810          HC       3
             *

811          KK     RS2
812          KM  CHANNEL ROUTING
813          RD     665   .0075    .020            TRAP      20       4
             *

814          KK      P3   BASIN
815          KM  SUB-BASIN P3
816          BA   0.054
817          LG    0.25    0.25    4.45    0.43      30
818          UC   0.431   0.361
819          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



```
820          UA     100
             *

821          KK     RT3
822          KM
823          DT     RB3   5.230
824          DI       0     100     500    1000    5000
825          DQ       0     100     500    1000    5000
             *

826          KK     CP3
827          KM
828          HC       2
             *

829          KK     P4b   BASIN
830          KM  SUB-BASIN P4b
831          BA   0.017
832          LG    0.25    0.25    4.45    0.43      30
833          UC   0.225   0.132
834          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
835          UA     100
             *

836          KK    RT4b
837          KM
838          DT    RB4b   0.320
839          DI       0     100     500    1000    5000
840          DQ       0     100     500    1000    5000
             *

841          KK      S4   BASIN
842          KM  SUB-BASIN S4
843          BA   0.014
844          LG    0.33    0.31    4.80    0.30       2
845          UC   0.361   0.546
846          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
847          UA     100
             *
```



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

848          KK      P1   BASIN
849          KM  SUB-BASIN P1
850          BA   0.029
851          LG    0.34    0.38    6.00    0.18       1
852          UC   0.362   0.389
853          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
854          UA     100
             *

855          KK     DT1
856          KM
857          DT     DB1   0.500
858          DI       0     100     500    1000    5000
859          DQ       0     100     500    1000    5000
             *

860          KK     CP1
861          KM
862          HC       2
             *
```

```
863          KK     HV2   BASIN
864          KM  SUB-BASIN HV2
865          BA   0.031
866          LG    0.25    0.25    4.45    0.43      29
867          UC   1.500   4.221
868          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
869          UA     100
             *

870          KK    RHV2
871          KM  CHANNEL ROUTING
872          RD     910   .0033    .015            TRAP      10       4
             *

873          KK   DTHV2
874          KM
875          DT   DBHV2   0.680
876          DI       0     100     500    1000    5000
877          DQ       0     100     500    1000    5000
             *

878          KK     P4a   BASIN
879          KM  SUB-BASIN P4a
880          BA   0.039
881          LG    0.25    0.25    4.00    0.55      30
882          UC   0.499   0.448
883          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
884          UA     100
             *
```



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

885          KK    DT4a
886          KM
887          DT    DB4a   0.740
888          DI       0     100     500    1000    5000
889          DQ       0     100     500    1000    5000
             *

890          KK   SOUTH
891          KM  Combined at South HVR
892          HC       5
             *

893          KK    N110   BASIN
894          KM  SUB-BASIN N110
895          BA   0.054
896          LG    0.35    0.35    4.50    0.36       0
897          UC   0.458   0.338
898          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
899          UA     100
             *
             * A WASH TO THE WEST THAT CARRIES A MAX. FLOW OF 47 CFS.
             *

900          KK   DN110
901          DT   N110I
902          DI       0      30      60     100     300     600    1200    2200
903          DQ       0      27      54      90     270     553    1153    2153
             *
             * ROUTE RN110W IS 2752 FT WITH A SLOPE OF .0025
```



```
             * CROSS SECTION IS A MEDIUM NATURAL WASH
             *

904          KK  RN110W
905          RS      15    FLOW       0
906          RC    0.05     .06     .05    2752   .0025
907          RX       0      50     250     350     360     420     620     720
908          RY      10       8       6       2       0       6       8      10
             *
             * RECOVER DIVERTED FLOW FROM CA09T
             *

909          KK  DRA09T
910          DR   A09TI
             *
             * ROUTE RA09TS IS 2824 FT WITH A SLOPE OF .0057
             * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
             * ROUTE FLOW TO CA09R FROM CA09T
             *
```



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

911          KK  RA09TS
912          RS      15    FLOW       0
913          RC    0.05     .06     .05    2824   .0057
914          RX       0     400     800    1200    1600    2000    2400    2800
915          RY       3       1      .5       0       0      .5       1       3
             *

916          KK    A09R   BASIN
917          KM  SUB-BASIN A09R
918          BA   0.144
919          LG    0.35    0.34    4.25    0.43       1
920          UC   0.792   0.663
921          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
922          UA     100
             *
             * COMBINE  CN110,  CA09T, AND A09R
             *

923          KK   CA09R
924          HC       3
             *
             * EXISTING CONDITIONS FLOW DOWN LAKE PLEASANT RD
             *

925          KK   DA09R
926          DT   A09RI
927          DI       0      10      50     100     300     500     800    1000    2000
928          DQ       0     9.9    49.3    99.4   299.5     499     799     999    1999
             *
             * ROUTE RA09RW IS 1609 FT WITH A SLOPE OF .0012
             * *** ROUTE FLOW TO CA09S FROM CA09R  ************************
             *

929          KK  RA09RW
930          RS      15    FLOW       0
931          RC    0.05    0.04     .05    1609  0.0012
932          RX       0     200     300     325     340     360     380     880
933          RY       5       4       3       2       3       3       2     3.5
             *
```

```
934          KK    A09S   BASIN
935          KM  SUB-BASIN A09S
936          BA   0.072
937          LG    0.13    0.25    4.90    0.40      71
938          UC   0.515   0.441
939          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
940          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

941          KK  DA09SQ
942          DT   DA09S     7.0
943          DI       0     100    1000    1000
944          DQ       0     100    1000    1000
             *
             * *** COMBINE  RA09RW AND A09S ***********************************************
             *

945          KK   CA09S
946          HC       2
             *

947          KK  RA09SW
948          RS       6    FLOW       0
949          RC    0.03    0.03    0.03    1600  0.0085
950          RX       0      50     100     120     140     160     210     260
951          RY       6       4       3       0       0       3       4       6
             *

952          KK   A09QA   BASIN
953          KM  SUB-BASIN A09Q North Portion
954          BA   0.092
955          LG    0.34    0.34    4.20    0.44       2
956          UC   0.534   0.331
957          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
958          UA     100
             *
             * *** COMBINE  Flows of RA09SW and A09QA ***************************************
             *

959          KK  CA09QA
960          HC       2
             *
             * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ***************************
             * FUTURE SPLIT: ALL EXISTING FLOW TO THE SOUTH
             *

961          KK  DA09QA
962          DT  A09QAI
963          DI       0      10      30      50     100     500    1000    2000
964          DQ       0     9.2    29.3    49.4    99.5     499     999    1999
             *
             * *** ROUTE CA09QA TO CA99YA ******************************************
             *

965          KK  RA09QW
966          RS       4    FLOW       0
967          RC    0.03    0.03    0.03    2400  0.0085
968          RX       0      50     100     120     140     160     210     260
```



```
969          RY       6       4       3       0       0       3       4       6
             *
```



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

970          KK   A99YA   BASIN
971          KM  SUB-BASIN A99Y East Portion
972          BA   0.103
973          LG    0.35    0.34    4.90    0.29       1
974          UC   0.413   0.291
975          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
976          UA     100
             *
             * *** COMBINE  RA09QW AND A99YA ***********************************************
             *

977          KK  CA99YA
978          HC       2
             *

979          KK  RA99YA
980          RS       3    FLOW       0
981          RC    0.03    0.03    0.03    2000  0.0085
982          RX       0      50     100     120     140     160     210     260
983          RY       6       4       3       0       0       3       4       6
             *

984          KK   A99YB   BASIN
985          KM  SUB-BASIN A99Y West Portion
986          BA   0.171
987          LG    0.34    0.34    3.78    0.55       4
988          UC   0.556   0.298
989          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
990          UA     100
             *
             * *** COMBINE  RA99YA, SOUTH AND A99YB ********************************************
             *

991          KK  CA99YB
992          HC       3
             *
             *
             * Dummy Combining at AFR and South of Happy Valley Rd.
             *

993          KK    AFR1
994          HC       3
             *
             * RECOVER DIVERTED FLOW FROM A09U
             *

995          KK  BA09UI
996          DR   A09UI
             *
             * *** ROUTE RA09US ***************************************************************
             * ROUTE RA09US IS 3000 FT WITH A SLOPE OF 0.0076
             * CROSS SECTION IS A SMALL ROAD WITH HOMES ON THE WEST SIDE
             * ALONG local STREETS
             * *** ROUTE FLOW TO N11NB FROM Happy Valley RD (CA09U)
             *
```

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

 997          KK  RA09US
 998          RS       6    FLOW       0
 999          RC    0.04    0.03    0.04    3000  0.0076
1000          RX       0       1      54      55      95      96     124     624
1001          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *
              *

1002          KK   N11NB   BASIN
1003          KM  SUB-BASIN N11NBN
1004          BA   0.140
1005          LG    0.31    0.27    4.70    0.31       4
1006          UC   0.567   0.481
1007          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1008          UA     100
              *
              * Combining Flows
              *

1009          KK  CN11NB
1010          HC       2
              *
              * ROUTE RN11NW IS 2521 FT WITH A SLOPE OF 0.0016
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO BOTH SIDES
              * ALONG Mariposa GrANDe
              *

1011          KK  RN11NW
1012          RS      12    FLOW       0
1013          RC    0.04    0.03    0.04    2521  0.0016
1014          RX       0       1      70      71      96      97     182     183
1015          RY    9.25    1.25    0.25       0       0    0.25    1.25    9.25
              *
              * RECOVER DIVERTED FLOW FROM N11OI

1016          KK  BN11OI
1017          DR   N11OI
              *
              * ROUTE RN11OS IS 1184 FT WITH A SLOPE OF 0.0068
              * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
              * ALONG natural pathways
              * ROUTE FLOW TO Mariposa GrANDe (CN11M) FROM CN11O
              *

1018          KK  RN11OS
1019          RS      15    FLOW       0
1020          RC    0.05     .06     .05    1184  0.0068
1021          RX       0     400     800    1200    1600    2000    2400    2800
1022          RY       3       1      .5       0       0      .5       1       3
              *
```



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

1023          KK    N11M   BASIN
1024          KM  SUB-BASIN N11M
1025          BA   0.100
1026          LG    0.35    0.35    4.15    0.45       0
1027          UC   0.477   0.261
1028          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1029          UA     100
              *
              * *** COMBINE  CN11M ***************************************************
              * COMBINE BASIN N11M, RN11OS, and RN11NW
              * Mariposa GrANDe AND 95st AVE
              *

1030          KK   CN11M
1031          HC       3
              *
              * *** DIVERSION DN11M ***********************************************************
              * DIVERSION MAIN 95th AVE(SOUTH), SPLIT (WEST)
              *

1032          KK   DN11M
1033          DT   N11MI
1034          DI       0       1      40      80     100     300     600    1200    2200
1035          DQ       0     .25      10      20      25      75     150     184     184
              *
              * ROUTE RN11MS IS 2689 FT WITH A SLOPE OF 0.0071
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO ONE SIDE
              * ALONG 95st AVE
              * ROUTE FLOW TO PINNACLE PEAK (CN11J) FROM Mariposa GrANDe (CN11M)
              *

1036          KK  RN11MS
1037          RS       7    FLOW       0
1038          RC    0.05    0.03    0.05    2689  0.0071
1039          RX       0       1      50      51      73      74     124     524
1040          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *

1041          KK    N11J   BASIN
1042          KM  SUB-BASIN N11J
1043          BA   0.244
1044          LG    0.30    0.25    4.10    0.51      13
1045          UC   0.851   0.601
1046          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1047          UA     100
              *
              * *** STORAGE ROUTING LN11J ******************************************
              * *** SMALL SUBDIVISION STORAGE (ACCOUNTED) ******************************
              *
```



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

1048          KK   LN11J
1049          DT  LN11JD     1.8
1050          DI       0     100    1000   10000
1051          DQ       0     100    1000   10000
              *
              * COMBINE N11J AND RN11KW
              * Pinnacle Peak AND 95st AVE
              *

1052          KK   CN11J
1053          HC       2
              *
              * Existing Condition 100% to South
              *

1054          KK   DN11J
```

```
1055          DT   N11JI
1056          DI       0      10     100    1000    5000
1057          DQ       0      10     100    1000    5000
              *
              * ROUTE RN11JW IS 1080 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *
              * ROUTE FLOW TO CX4 FROM CN11J
              *

1058          KK  RN11JW
1059          RS       1    FLOW       0
1060          RC     .04    0.04     .04    1080   .0019
1061          RX       0     100     140     160     200     300     400     500
1062          RY      10       9       0       0       9      10      11      12
              *
              * RECOVER DIVERTED FLOW FROM CN11M
              *

1063          KK  DRN11M
1064          DR   N11MI
              *
              * ROUTE RN11MW IS 3871 FT WITH A SLOPE OF .0046
              * CROSS SECTION IS A ROAD WITH HOMES TO THE WEST SIDE
              * ROUTE FLOW TO CX4 FROM CN11M
              *

1065          KK  RN11MW
1066          RS      15    FLOW       0
1067          RC    0.05    0.04     .05    3871   .0046
1068          RX       0       1      50      51      76      77     102     602
1069          RY      10       2       1    0.75    0.75       1       2     3.5
              *
              * *** COMBINE  CN11J AND CN11M ***********************************************
              *
```



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

1070          KK     CX4
1071          HC       2
              *
              * ROUTE RX4 IS 2164 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09O FROM CX4  ***************************
              *

1072          KK     RX4
1073          RS       6    FLOW      -1
1074          RC     .04    0.04     .04    2164  0.0023
1075          RX       0     100     140     160     200     300     400     500
1076          RY      10       9       0       0       9      10      11      12
              *

1077          KK    A09O   BASIN
1078          KM  SUB-BASIN A09O
1079          BA   0.194
1080          LG    0.32    0.29    4.40    0.41       6
1081          UC   0.937   0.939
1082          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1083          UA     100
              *
```



```
1084          KK   SA09O STORAGE
1085          KM  Online Detention Basin, 28.5 ac-ft.
1086          RS       1    STOR       0
1087          SV       0     9.0    15.0    21.0    28.5    38.0
1088          SE       0       2       3       4       5       6
1089          SL       0   7.065    0.62     0.5
1090          SS       5     100     2.7     1.5
              *
              * RECOVER DIVERTED FLOW FROM A09RI
              *

1091          KK  BA09RI
1092          DR   A09RI
              *
              * ROUTE RA09RS IS 3928 FT WITH A SLOPE OF .0074
              * CROSS SECTION IS A HIGHWAY
              * ROUTE FLOW TO CA09O FROM CA09R
              *

1093          KK  RA09RS
1094          RS      12    FLOW       0
1095          RC    0.05    0.04    0.05    3928   .0074
1096          RX       0     100     200     225     250     275     375     475
1097          RY       6       5       4       3       3       4       5       6
              *
              * *** COMBINE  CX4, RA09RS, AND A09O ******************************************
              *
```



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

1098          KK   CA09O
1099          HC       3
              *
              * Existing Condition: All Flow to South
              *

1100          KK   DA09O
1101          DT   A09OI
1102          DI       0     100    1000    5000
1103          DQ       0     100    1000    5000
              *
              *
              * ROUTE RA09OW IS 1076 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09P FROM CA09O  **************************
              *

1104          KK  RA09OW
1105          RS       1    FLOW       0
1106          RC     .04     .04     .04    1076  0.0019
1107          RX       0     100     140     160     200     300     400     500
1108          RY      10       9       0       0       9      10      11      12
              *

1109          KK    A09P   BASIN
1110          KM  SUB-BASIN A09P
1111          BA   0.187
1112          LG    0.32    0.29    4.65    0.34       6
1113          UC   0.727   0.513
1114          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1115          UA     100
              *
```

```
1116          KK   SA09P STORAGE
1117          KM  Online Detention Basin, 25.2 ac-ft.
1118          RS       1    STOR       0
1119          SV       0     7.0    13.0    19.0    25.2    33.0
1120          SE       0       2       3       4       5       6
1121          SL       0   7.065    0.62     0.5
1122          SS       5     100     2.7     1.5
              *
              * *** COMBINE  CA09O AND A09P ***********************************************
              *

1123          KK   CA09P
1124          HC       2
              *
              * ROUTE RA09P IS 884 FT WITH A SLOPE OF .0136
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09Q FROM CA09P  *************************
              *
```



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

1125          KK   RA09P
1126          RS       2    FLOW       0
1127          RC     .04     .04     .04     884  0.0136
1128          RX       0     100     140     160     200     300     400     500
1129          RY      10       9       0       0       9      10      11      12
              *
              * Retrieve Diverted Flow of A09QAI
              *

1130          KK  BA09QA
1131          DR  A09QAI
              *
              * *** ROUTE FLOW TO CA09QB FROM CA09QA *************************
              *

1132          KK  RA09QB
1133          RS       8    FLOW       0
1134          RC    0.05     .06     .05    2700  0.0095
1135          RX       0     100     300     360     380     420     620     720
1136          RY      10       8       6       2       0       6       8      10
              *

1137          KK   A09QB   BASIN
1138          KM  SUB-BASIN A09Q South Portion
1139          BA   0.144
1140          LG    0.30    0.25    4.15    0.44       5
1141          UC   0.636   0.449
1142          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1143          UA     100
              *
              * *** COMBINE Flows of A09QA,A09QB  and RA09P  *********************************
              *

1144          KK   CA09Q
1145          HC       3
              *
              * Existing Condition:All Flow to South
              *

1146          KK   DA09Q
```



```
1147          DT   A09QI
1148          DI       0      10     100     500    1000    5000
1149          DQ       0      10     100     500    1000    5000
              *
              * ROUTE RA09QW IS 2468 FT WITH A SLOPE OF 0.0158
              * CROSS SECTION IS A MEDIUM CHANNEL
              * *** ROUTE CA09Q TO CA10A ***********************************************
              *
```



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

1150          KK  RA09QW
1151          RS       1    FLOW       0
1152          RC     .05     .05     .05    2468  0.0158
1153          RX       0     100     140     160     200     300     400     500
1154          RY      10       9       0       0       9      10      11      12
              *

1155          KK    A10A   BASIN
1156          KM  SUB-BASIN A10A
1157          BA   0.189
1158          LG    0.33    0.32    5.30    0.24       2
1159          UC   0.524   0.330
1160          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1161          UA     100
              *

1162          KK   CA10A
1163          HC       2
              *
              * ROUTE RA10A IS 2831 FT WITH A SLOPE OF 0.0148
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *

1164          KK   RA10A
1165          RS       2    FLOW       0
1166          RC    0.05    0.05    0.05    1553     .03
1167          RX       0     100     140     170     210     310     410     510
1168          RY      10       9       0       0       9      10      11      12
              *

1169          KK    A99X   BASIN
1170          KM  SUB-BASIN A99X
1171          BA   0.264
1172          LG    0.21    0.28    4.20    0.53      39
1173          UC   0.419   0.203
1174          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1175          UA     100
              *

1176          KK   CA99X
1177          HC       2
              *
              * Dummy Combination at AFR and Pinnacle Peak Rd.
              *

1178          KK    AFR2
1179          HC       2
              *
              * Retrieve Diverted Flow of A09OI
              *
```

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

1180          KK  BA09OI
1181          DR   A09OI
              *
              * ROUTE RA09OS IS 5602 FT WITH A SLOPE OF .0062
              * CROSS SECTION IS A RURAL ROAD WITH A DITCH RIGHT
              * *** ROUTE FLOW TO CX7 FROM CA09O  ****************************
              *

1182          KK  RA09OS
1183          RS       8    FLOW       0
1184          RC     .03     .03     .03    5602   .0062
1185          RX       0     200     220   227.5     235     255     300     460
1186          RY       4       2       0       0       2     2.5       3       4
              *

1187          KK    A09K   BASIN
1188          KM  SUB-BASIN A09K
1189          BA   0.410
1190          LG    0.34    0.34    4.40    0.39       2
1191          UC   0.845   0.559
1192          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1193          UA     100
              *

1194          KK   DA09K
1195          KM  DIVERSION DA09K
1196          KM  DIVERSION SPLITS FLOW WITHIN SUB-BASIN A09K BASED ON TOPOGRAPHICAL SPLIT
1197          KM  A PORTION OF THE FLOW IS DIRECTED WEST TO LAKE PLEASANT PARKWAY
1198          KM  THE REMAINDER IS DIRECTED TO N11FA
1199          DT   A09KI
1200          DI       0     100     200     300     400     500     600     700    2000
1201          DQ       0      73     146     219     292     365     438     511    1460
              *

1202          KK     CX7
1203          KM  COMBINE Flows from North and East
1204          HC       2
              *

1205          KK    RX7S
1206          KM  ROUTE FLOW SOUTH TO CX8 FROM CX7
1207          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1208          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1209          KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE WEST SIDE
1210          RS       5    FLOW       0
1211          RC     .03     .03     .03    2800    .002
1212          RX       0       3       9      15      35      41      47      50
1213          RY       5       4       2       0       0       2       4       5
              *
              * North Portion of N11N
              *
```



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

1214          KK   N11NA   BASIN
1215          KM  UPPER PART OF SUBBASIN N11N
1216          BA   0.022
1217          LG    0.35    0.35    4.00    0.47      29
```



```
1218          UC   0.178   0.111
1219          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1220          UA     100
              *

1221          KK  RN11NA
1222          RS      13    FLOW       0
1223          RC    0.05    0.04     .05    3500  0.0083
1224          RX       0       1      51      52      82      83     108     608
1225          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.75
              *

1226          KK   N11NC   BASIN
1227          KM  East PART OF SUBBASIN N11N
1228          BA   0.171
1229          LG    0.31    0.29    4.20    0.46       7
1230          UC   0.453   0.276
1231          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1232          UA     100
              *

1233          KK  CN11NC
1234          HC       2
              *

1235          KK  DN11NC
1236          KM  DIVERT FLOW 10-YEAR RUNOFF (149 cfs) to East
1237          DT   N11NP
1238          DI       0     149    2000
1239          DQ       0     149     149
              *

1240          KK  RN11NC
1241          KM  ROUTE N11NC to South
1242          RS       5    FLOW      -1
1243          RC    0.05    0.04     .05    1600  0.0089
1244          RX       0      10      20      30      70      80      90     100
1245          RY       3       2       1       0       0       1       2       3
              *

1246          KK   N11ND   BASIN
1247          KM  LOWER PART OF SUBBASIN N11N
1248          BA   0.053
1249          LG    0.29    0.25    4.60    0.36      12
1250          UC   0.564   0.502
1251          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1252          UA     100
              *
```



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

1253          KK    N11K   BASIN
1254          KM  SUB-BASIN N11K
1255          BA   0.167
1256          LG    0.30    0.25    4.20    0.46       9
1257          UC   0.772   0.599
1258          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1259          UA     100
              *

1260          KK   CN11K
1261          KM  COMBINE N11K, RN11NC AND N11ND AT 91ST AVENUE AND PINNACLE PEAK
```

```
1262        HC       3
            *
            * Divert 10-Year Flow (55 cfs) into SD to East

1263        KK  DN11KS
1264        DT   N11KP
1265        DI       0      55     500    2000
1266        DQ       0      55      55      55
            *

1267        KK   RN11K
1268        RS      15    FLOW       0
1269        RC     .04    0.04     .04    5178   .0062
1270        RX       0     200     230     260     280     310     340     540
1271        RY      10       8       7       0       0       7       8      10
            *
            * Initial flow goes to west and excess flow splits to southeast
            * DIVERSION HAS BEEN MODIFIED FROM ORIGINAL ENTELLUS STUDY
            * PER CITY OF PEORIA COMMENTS (1/18/05)
            *

1272        KK     DX5
1273        DT     X5I
1274        DI       0      10     100     200     300     400     500    1000    2000
1275        DQ       0       0       0      94     154     249     344     844    1844
            *
            * ROUTE RX5W IS 1292 FT WITH A SLOPE OF 0.0008
            * CROSS SECTION IS DIRT ROAD
            * WEST ALONG DEER VALLEY RD
            * ROUTE FLOW FROM 91st AVE. (CN11H) TO WEST OF 91st AVE (CX5)
            *

1276        KK    RX5W
1277        RS      11    FLOW       0
1278        RC    0.05   0.045    0.05    1292   .0008
1279        RX       0     200     225     250     270     295     320     520
1280        RY    4.25    2.25    1.25       0       0    1.25    2.25    4.25
            *
```



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

1281        KK    N11H   BASIN
1282        KM  SUB-BASIN N11H
1283        BA   0.419
1284        LG    0.35    0.35    4.50    0.36       0
1285        UC   0.843   0.519
1286        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1287        UA     100
            *
            * COMBINE RX5W AND BASIN N11H
            *

1288        KK   CN11H
1289        HC       2
            *
            * NEW ALTERNATIVE CHANNEL ACROSS STATE LAND
            *

1290        KK   RN11H
1291        KM  ROUTE FLOW WEST TO CN11G FROM CN11H
1292        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1293        KM  3:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
```



```
1294        KM  ADJACENT TO DEAR VALLEY ROAD ON THE NORTH SIDE
1295        RS       7    FLOW       0
1296        RC     .03     .03     .03    3300    .001
1297        RX       0       3      12      18      38      44      53      56
1298        RY       6       5       2       0       0       2       5       6
            *
            * RECOVER DIVERTED FLOW FROM N11J                                          G
            *

1299        KK  BN11JI
1300        DR   N11JI
            *
            * ROUTE RN11JS IS 5670 FT WITH A SLOPE OF 0.0062
            * CROSS SECTION IS A SMALL NATURAL WASH
            * ALONG NATURAL WASH
            * ROUTE FLOW TO DEER VALLEY RD. (CN11G) FROM PINNACLE PEAK (CN11J)
            *

1301        KK  RN11JS
1302        RS      12    FLOW       0
1303        RC    0.05    0.06    0.05    5670  0.0062
1304        RX       0     350     450     480     482     510     610     910
1305        RY       7       6       5       1       0       5       6       7
            *

1306        KK    N11G   BASIN
1307        KM  SUB-BASIN N11G
1308        BA   0.524
1309        LG    0.35    0.35    4.35    0.40       0
1310        UC   0.844   0.464
1311        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1312        UA     100
            *
            * COMBINE  RN11JS, RN11H AND N11G AT 98TH AVE
            *
```



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

1313        KK   CN11G
1314        HC       3
            *

1315        KK   RN11G
1316        KM  ROUTE FLOW SOUTH TO CN11FB FROM CN11G
1317        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1318        KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1319        KM  ADJACENT TO 98TH AVE ON THE WEST SIDE
1320        RS       4    FLOW       0
1321        RC     .03     .03     .03    2500    .002
1322        RX       0      12      24      36      62      68      72      80
1323        RY       6       4       2       0       0       2       4       6
            *

1324        KK   N11DA   BASIN
1325        KM  SUB-BASIN N11DA CREATED BY CVL 7/04
1326        BA   0.256
1327        LG    0.25    0.25    4.60    0.39      30
1328        UC   0.781   0.511
1329        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1330        UA     100
            *
            * DOVE VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
```

```
                    * STORAGE MODIFIED PER CITY OF PEORIA TO DISCHARGE UP TO 200CFS WEST
                    * TOTAL DETENTION/RETENTION VOLUME = 18 AC-FT. 10 AC-FT MODELED AS RETENTION
                    * 8 AC-FT MODELED AS ON-LINE DETENTION BASIN ON NEC OF RGL & 95TH
                    *

1331                KK  LN11DA
1332                DT  LDAOUT     8.0
1333                DI      0     100    1000   10000
1334                DQ      0     100    1000   10000
                    *

1335                KK  SN11DA
1336                KM  2-8'x3' BOX CULVERTS TO TAKE FLOW TO WEST
1337                KM  THE WEST + EAST DETENTION BASIN WERE COMBINED WITH 1-18"RCP TO SOUTH
1338                RS      1    STOR      0
1339                SV    0.0     .06    0.16    0.35    1.91    5.62   10.58   16.46
1340                SE   1257    1258    1259    1260    1261    1262    1263    1264
1341                SQ      0       5       9      50      84     113     140     205
                    *

1342                KK  N11DAW
1343                KM  SPLIT THE FLOW BETWEEN BOX AND PIPE - Pipe Flow to South
1344                DT  D11DAS
1345                DI      0       5       9      50      84     113     140     205
1346                DQ      0       5       9      15      18      20      22      23
                    *
1                                                HEC-1 INPUT                                                    PAGE 41

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

1347                KK  RN11DA
1348                KM  ROUTE FLOW WEST TO CN11FB FROM N11DA
1349                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1350                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1351                KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1352                RS      5    FLOW      0
1353                RC    .03     .03     .03    2000    .001
1354                RX      0       6      18      30      35      41      47      50
1355                RY      5       4       2       0       0       2       4       5
                    *

1356                KK   N11FB   BASIN
1357                KM  SUB-BASIN N11FB
1358                BA   0.121
1359                LG    0.24    0.26    4.40    0.45      30
1360                UC   0.740   0.694
1361                UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1362                UA     100
                    *

1363                KK  LN11FB
1364                KM  STORAGE ROUTING LN11FB
1365                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1366                DT  LN1FBD    10.6
1367                DI      0     100    1000   10000
1368                DQ      0     100    1000   10000
                    *

1369                KK  CN11FB
1370                KM  COMBINE LN11FB and RN11DA
1371                HC      2
                    *
```



```
1372                KK  C98RGL
1373                KM  COMBINE CN11FB AND RN11G AT WEST 98TH AVE AND RGL
1374                HC      2
                    *

1375                KK  RN11FB
1376                KM  ROUTE FLOW WEST TO CN11FA FROM CN11FB
1377                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1378                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1379                KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1380                RS      2    FLOW      0
1381                RC    .03     .03     .03    1100    .001
1382                RX      0      12      24      36      62      68      72      80
1383                RY      8       4       2       0       0       2       4       8
                    *
1                                                HEC-1 INPUT                                                    PAGE 42

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

1384                KK  DRA09K
1385                KM  DIVERSION RECOVER DA09K
1386                KM  RECOVER DIVERTED FLOW FROM A09K
1387                DR   A09KI
                    *

1388                KK  RA09KS
1389                KM  ROUTE FLOW SOUTH TO CN11FA
1390                KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1391                KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1392                KM  ADJACENT TO THE COMMERCIAL PROPERTY ON THE EAST SIDE
1393                RS      5    FLOW      0
1394                RC    .03     .03     .03    2700    .002
1395                RX      0      12      24      26      52      58      64      70
1396                RY      6       4       2       0       0       2       4       6
                    *

1397                KK   N11FA   BASIN
1398                BA   0.180
1399                LG    0.22    0.26    4.40    0.46      34
1400                UC   0.730   0.580
1401                UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1402                UA     100
                    *

1403                KK  LN11FA
1404                KM  STORAGE ROUTING LN11FA
1405                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1406                DT  LN1FAD     7.7
1407                DI      0     100    1000   10000
1408                DQ      0     100    1000   10000
                    *

1409                KK   A09GA   BASIN
1410                BA   0.074
1411                LG    0.10    0.25    4.35    0.56      80
1412                UC   0.287   0.164
1413                UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1414                UA     100
                    *

1415                KK  LA09GA
1416                KM  STORAGE ROUTING LA09GA
1417                KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
```

```
1418          DT  L09GAD     5.9
1419          DI       0     100    1000   10000
1420          DQ       0     100    1000   10000
              *
```



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

1421          KK  CN11FA
1422          KM  COMBINE RA09KS,LN11FA,LA09GA AND RN11FB
1423          HC       4
              *

1424          KK  RN11FA
1425          KM  ROUTE FLOW WEST TO CA09G FROM CN11FA
1426          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1427          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1428          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1429          RS       2    FLOW       0
1430          RC     .03     .03     .03     800    .001
1431          RX       0       6      12      18      52      58      64      70
1432          RY       8       4       2       0       0       2       4       8
              *

1433          KK   A09GB   BASIN
1434          KM  SUB-BASIN A09GB
1435          BA   0.051
1436          LG    0.23    0.25    4.30    0.49      35
1437          UC   1.183   1.508
1438          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1439          UA     100
              *

1440          KK  LA09GB
1441          KM  STORAGE ROUTING LA09GB
1442          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1443          DT  L09GBD     2.8
1444          DI       0     100    1000   10000
1445          DQ       0     100    1000   10000
              *

1446          KK   CA09G
1447          KM  COMBINE CA09GA and A09GB
1448          HC       2
              *
              * DIVERSION TO SOUTH ALONG 101ST AVE, MAXIMUM 150 CFS PER CITY

1449          KK   DA09G
1450          DT   A09GI
1451          DI       0      50     100     300     750    1200    2000
1452          DQ       0      10      20      60     150     150     150
              *

1453          KK  RA09GW
1454          KM  ROUTE FLOW WEST TO CX8 FROM CA09G
1455          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1456          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1457          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1458          RS       1    FLOW       0
1459          RC     .03     .03     .03     900    .001
1460          RX       0       6      12      18      52      58      64      70
1461          RY       8       4       2       0       0       2       4       8
              *
```



```
              * *** COMBINE  RX7S AND RA09GW ***********************************************
              *
```



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

1462          KK     CX8
1463          HC       2
              *
              * ROUTE RX8W IS 2300 FT WITH A SLOPE OF .001
              * CROSS SECTION IS THE NEW CHANNEL ALONG ROSE GARDEN LANE
              *

1464          KK    RX8W
1465          KM  ROUTE FLOW WEST TO CA09H1 FROM CX8
1466          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1467          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1468          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1469          RS       4    FLOW       0
1470          RC     .03     .03     .03    2300    .001
1471          RX       0      12      24      36      62      68      74      80
1472          RY       8       4       2       0       0       2       4       8
              *

1473          KK    A09H   BASIN
1474          KM  SUB-BASIN A09H
1475          BA   0.237
1476          LG    0.24    0.25    4.55    0.41      31
1477          UC   0.937   0.801
1478          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1479          UA     100
              *

1480          KK   LA09H
1481          KM  STORAGE ROUTING LA09H
1482          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1483          DT  LA09HD    12.6
1484          DI       0     100    1000   10000
1485          DQ       0     100    1000   10000
              *

1486          KK  CA09H1
1487          KM  Combine flows from CX8 and A09H
1488          HC       2
              *

1489          KK    A09J   BASIN
1490          KM  SUB-BASIN A09J
1491          BA   0.168
1492          LG    0.25    0.25    4.35    0.46      30
1493          UC   0.749   0.639
1494          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1495          UA     100
              *
              * *** STORAGE ROUTING LA09J ***********************************************
              * *** FUTURE DEVELOPMENT STORAGE (ACCOUNTED) ****************************
              *
```



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

1496          KK   LA09J
```

```
1497        DT  LA09JD     7.7
1498        DI       0     100    1000   10000
1499        DQ       0     100    1000   10000
            *
            * *** DIVERSION DA09J ********************************************************
            * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ****************************
            * 100% Flows to South based on the report

1500        KK   DA09J
1501        DT   A09JI
1502        DI       0      10      30      50     100     500    1000    2000
1503        DQ       0       0       0       0       0       0       0       0
            *
            * *** ROUTE FLOW TO CA09H   *************************
            *

1504        KK  RA09JS
1505        RS      12    FLOW       0
1506        RC     .04     .04     .04    2800  .00350
1507        RX       0     100     200     225     245     270     370     470
1508        RY       8       7       6       0       0       6       7       8
            *

1509        KK   CA09H
1510        KM  COMBINE CA09H1 and RA09JS
1511        HC       2
            *
            * ROUTE FLOW TO CX10 FROM CA09H
            *

1512        KK   RA09H
1513        RS       1    FLOW       0
1514        RC     .03     .03     .03     850    .005
1515        RX     100     118     126     150     200     224     232     250
1516        RY      10       8       6       0       0       6       8      10
            *
            * *** RECOVER DIVERTED FLOW FROM A09QI*************************************
            *

1517        KK  BA09QI
1518        DR   A09QI
            *
            * *** ROUTE RA09QS ************************************************************
            *
            * ROUTE RA09QS IS 1655 FT WITH A SLOPE OF .0073
            * CROSS SECTION IS A MEDIUM NATURAL WASH
            * *** ROUTE FLOW TO CA09M FROM CA09Q  *************************
            *
```



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

1519        KK  RA09QS
1520        RS       6    FLOW       0
1521        RC    0.05     .06     .05    1655  0.0073
1522        RX       0      50     250     350     360     420     620     720
1523        RY      10       8       6       2       0       6       8      10
            *

1524        KK    A09M   BASIN
1525        KM  SUB-BASIN A09M
1526        BA   0.249
1527        LG    0.28    0.28    4.45    0.42      22
```



```
1528        UC   0.721   0.546
1529        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1530        UA     100
            *
            * *** STORAGE ROUTING LA09M ***********************************************
            * *** IRONWOOD RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) ***************
            *

1531        KK   LA09M
1532        DT  LA09MD     6.9
1533        DI       0     100    1000   10000
1534        DQ       0     100    1000   10000
            *
            * *** COMBINE  CA09Q AND A09M ***************************************************
            *

1535        KK   CA09M
1536        HC       2
            *
            * ROUTE RA09M IS 1102 FT WITH A SLOPE OF .0064
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09N FROM CA09M  *************************
            *

1537        KK   RA09M
1538        RS       2    FLOW       0
1539        RC    0.05    0.04     .05    1102  0.0064
1540        RX       0       1      21      41      51      71     101     102
1541        RY      10       4       0       4       5       6       6      10
            *

1542        KK    A09N   BASIN
1543        KM  SUB-BASIN A09N
1544        BA   0.110
1545        LG    0.27    0.27    5.80    0.22      25
1546        UC   0.647   0.512
1547        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1548        UA     100
            *
            * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
            *
```



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

1549        KK   CA09N
1550        HC       2
            *
            * *** STORAGE ROUTING LA09N ***********************************************
            * *** ALTA VISTA RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) **************
            *

1551        KK   LA09N
1552        RS       1    STOR       0
1553        SV     0.0     2.30    4.67    7.11    9.63   12.23   14.90   17.65   20.48
1554        SE  1250.0  1250.5  1251.0  1251.5  1252.0  1252.5  1253.0  1253.5  1254.0
1555        SQ       0     9.3    31.4    66.0   114.1   160.1   226.2   208.5   475.0
            *
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09L FROM CA09N  *************************
            *

1556        KK   RA09N
```

```
1557          RS      15    FLOW       0
1558          RC   0.025    0.02   0.025    2382  0.0040
1559          RX       0       1       7      11      17      21      29     100
1560          RY       5       4       2       0       0       2     3.0       5
              *
              * *** RECOVER DIVERTED FLOW FROM CA09J ***************************************
              *

1561          KK  DRA09J
1562          DR   A09JI
              *
              * ROUTE RA09JW IS 1749 FT WITH A SLOPE OF .0063
              * CROSS SECTION IS A CHANNEL ON THE WEST SIDE OF A ROAD
              * *** ROUTE FLOW TO CA09L FROM CA09J  *************************
              *

1563          KK  RA09JW
1564          RS       1    FLOW       0
1565          RC    0.04    0.03    0.04    1749  0.0063
1566          RX       0       1      21      31      41      51      81     281
1567          RY      14       6       6       0       0       6       6       8
              *

1568          KK    A09L   BASIN
1569          KM  SUB-BASIN A09L
1570          BA   0.136
1571          LG    0.23    0.26    4.90    0.32      26
1572          UC   0.760   0.625
1573          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1574          UA     100
              *
              * *** COMBINE BASIN A09L, RA09N, AND RA09JW   ********************************
              *
```



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

1575          KK   CA09L
1576          HC       3
              *
              * LAO9L is an Onlin Detention Basin, NOT Retention Basin
              *

1577          KK   LA09L
1578          RS       1    STOR       0
1579          SV     0.0    0.57    1.17    1.82    2.50    3.22    3.98    4.78    5.63    6.52
1580          SE     0.0     0.5     1.0     1.5     2.0     2.5     3.0     3.5     4.0     5.5
1581          SQ       0    10.0    30.0    52.0    80.0   110.0   140.0   155.0   180.0     600
              *
              * ROUTE RA09LS IS 2615 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS A NEW CHANNEL ALONG THE EAST SIDE OF THE ROAD
              * *** ROUTE FLOW TO CA99W FROM CA09L  *************************
              *

1582          KK  RA09LS
1583          RS       3    FLOW       0
1584          RC   0.025     .02   0.025    2615  0.0040
1585          RX       0       1       6      12      19      25      29     100
1586          RY       6       5       4       0       0       4       5       6
              *

1587          KK   A09IH   BASIN
1588          KM   Subbasin for Rose Garden and Desert Star Areas
```



```
1589          KM   SUB-BASIN A09IH
1590          BA   0.091
1591          LG    0.25    0.26    4.60    0.39      27
1592          UC   0.599   0.568
1593          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1594          UA     100
              *
              * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
              *

1595          KK  CA09IH
1596          HC       2
              *
              * Onlin Detention Basin (Box Culvert Outlet)
              *

1597          KK  LA09IH
1598          RS       1    STOR       0
1599          SV     0.0    1.12    2.29    3.52    4.79    6.12    7.51    8.95   10.45   12.01
1600          SE  1237.0  1237.5  1238.0  1238.5  1239.0  1239.5  1240.0  1240.5  1241.0  1242.5
1601          SQ       0    10.0    30.0    52.0    80.0   112.0   145.0   183.0   220.0   600.0
              *
```



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

1602          KK    A09I   BASIN
1603          KM  SUB-BASIN A09I
1604          BA   0.126
1605          LG    0.25    0.20    6.60    0.17      29
1606          UC   0.772   0.703
1607          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1608          UA     100
              *
              * *** ROSE GARDEN RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED)  ************
              *

1609          KK   LA09I
1610          DT  LA09ID     5.4
1611          DI       0     100    1000   10000
1612          DQ       0     100    1000   10000
              *
              * *** COMBINE  RA09IW AND RA09LS ***********************************************
              *

1613          KK    CX10
1614          HC       3
              *
              * ROUTE FLOW TO CA09F FROM CA09G
              *

1615          KK    RX10
1616          RS       5    FLOW       0
1617          RC    0.03    0.03    0.03    4470    .005
1618          RX     100     118     126     150     200     224     232     250
1619          RY      10       8       6       0       0       6       8      10
              *

1620          KK    A99V   BASIN
1621          KM  SUB-BASIN A99V
1622          BA   0.207
1623          LG    0.35    0.40    6.00    0.18       1
1624          UC   0.601   0.423
```

```
1625    UA      0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1626    UA    100
        *
        * *** COMBINE BASIN A99V AND RX11W  ***********************************
        *

1627    KK   CA99V
1628    HC       2
        *

1629    KK     A10   BASIN
1630    KM  SUB-BASIN A10
1631    BA   0.214
1632    LG    0.34    0.34    4.65    0.33       2
1633    UC   0.467   0.220
1634    UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1635    UA    100
        *
        *
```



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

1636    KK    A99W   BASIN
1637    KM  SUB-BASIN A99W
1638    BA   0.215
1639    LG    0.27    0.29    6.40    0.17      20
1640    UC   0.851   0.514
1641    UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1642    UA    100
        *
        * *** STORAGE ROUTING LA99W ***********************************************
        * *** DEER VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
        *

1643    KK   LA99W
1644    DT  LA99WD     6.7
1645    DI      0     100    1000   10000
1646    DQ      0     100    1000   10000
        *
        * Dummy Combination at AFR and Rose Garden Lane.
        *

1647    KK    AFR3
1648    HC       4
        *
        * *** RECOVER DIVERTED FLOW FROM CA09G ***************************************
        *

1649    KK  DRA09G
1650    DR   A09GI
        *
        * ROUTE RA09GS IS 3990 FT WITH A SLOPE OF .0015
        * CROSS SECTION IS A MEDIUM ROADSIDE CHANNEL
        * ROUTE FLOW TO CA09F FROM CA09G
        *

1651    KK  RA09GS
1652    RS     13    FLOW       0
1653    RC   0.04    0.04    0.04    3990   .0015
1654    RX      0     200     220     240     260     280     320     520
1655    RY      6       4       0       0       3       4       4       6
        *
```



```
1656    KK    A09F   BASIN
1657    KM  SUB-BASIN A09F
1658    BA   0.365
1659    LG    0.21    0.27    5.30    0.28      35
1660    UC   0.817   0.483
1661    UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1662    UA    100
        *
        * *** STORAGE ROUTING LA09F ***********************************************
        * *** PARKRIDGE ESTATES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ***************
        *
```



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

1663    KK   LA09F
1664    DT  LA09FD    13.6
1665    DI      0     100    1000   10000
1666    DQ      0     100    1000   10000
        *
        * *** COMBINE  CA09G, CA09H, AND A09F ****************************************
        *

1667    KK   CA09F
1668    HC       2
        *
        * *** DIVERTED  MAIN (WEST), DIVERTED (SOUTH)  ****************************
        * BEARDSLEY ROAD CHANNEL TO THE WEST. EXCESS FLOW TO THE SOUTH.
        *

1669    KK   DA09F
1670    DT   A09FI
1671    DI      0      10      30      50     100     500     700    1000
1672    DQ      0      .2      .3      .4      .5      80     250     500
        *
        * ******************************************************************************
        * ********************   BEARDSLEY RD DRAINAGE    ******************************
        * ******************************************************************************
        *
        * ROUTE RA09FW IS 3031 FT WITH A SLOPE OF .002
        * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
        *
        * *** ROUTE FLOW TO CA09E FROM CA09F  **************************
        *

1673    KK  RA09FW
1674    RS      9    FLOW       0
1675    RC    .03    .025     .03    3031   0.002
1676    RX      0       1      16      36      51     123     148     648
1677    RY     16       8       0       0       8       8       9      11
        *

1678    KK    A09E   BASIN
1679    KM  SUB-BASIN A09E
1680    BA   0.147
1681    LG    0.22    0.24    4.70    0.35      34
1682    UC   0.763   0.697
1683    UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1684    UA    100
        *
        * *** STORAGE ROUTING LA09E ***********************************************
        * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
```

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                    *
1                                   HEC-1 INPUT                                                    PAGE 52

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

1685          KK   LA09E
1686          DT  LA09ED     8.2
1687          DI       0     100    1000   10000
1688          DQ       0     100    1000   10000
              *
              * *** COMBINE LA09E AND A99E ****************************************
              *

1689          KK   CA09E
1690          HC       2
              *
              * ROUTE RA09E IS 2700 FT WITH A SLOPE OF .0041
              * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
              *
              * ROUTE FLOW TO CA09C FROM CA09E
              *

1691          KK   RA09E
1692          RS       3    FLOW       0
1693          RC    0.04    0.03    0.04    2700   .0041
1694          RX       0       1      16      36      51     123     148     648
1695          RY      16       8       0       0       8       8       9      11
              *

1696          KK    A09D   BASIN
1697          KM  SUB-BASIN A09D
1698          BA   0.254
1699          LG    0.23    0.20    6.60    0.16      31
1700          UC   0.480   0.185
1701          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1702          UA     100
              *
              * *** STORAGE ROUTING LA09D ***********************************************
              * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
              *

1703          KK   LA09D
1704          DT  LA09DD    15.3
1705          DI       0     100    1000   10000
1706          DQ       0     100    1000   10000
              *
              * *** COMBINE LA09D, AND RA09EW *************************
              *

1707          KK  CA09C*
1708          HC       2
              *
              * ROUTE RA09C* IS 841 FT WITH A SLOPE OF .0083
              * CROSS SECTION IS BEARDSLEY ROAD CHANNEL (MEASURED)
              * *** ROUTE FLOW TO CA09C FROM CA09C*   ***************************
              *
1                                   HEC-1 INPUT                                                    PAGE 53

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

1709          KK  RA09C*
1710          RS       1    FLOW       0
```



```
1711          RC    0.04    0.03    0.04     841   .0083
1712          RX       0      51      61      71      81     111     151     651
1713          RY       9       8       0       0       8       9       9      10
              *

1714          KK    A09C   BASIN
1715          KM  SUB-BASIN A09C
1716          BA   0.073
1717          LG    0.35    0.32    4.50    0.38       4
1718          UC   0.581   0.533
1719          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1720          UA     100
              *
              * *** COMBINE BASIN A09C AND RA09C*   **********************************
              *

1721          KK   CA09C
1722          HC       2
              *
              * ROUTE RA09C IS 1978 FT WITH A SLOPE OF .0056
              * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
              *

1723          KK   RA09C
1724          RS       3    FLOW      -1
1725          RC    0.04    0.04    0.04    1978  0.0056
1726          RX       0     100     120     130     150     180     205     705
1727          RY      14       8       0       0       8       8       9      10
              *

1728          KK    A09B   BASIN
1729          KM  SUB-BASIN A09B
1730          BA   0.041
1731          LG    0.12    0.25    4.10    0.68      71
1732          UC   0.221   0.141
1733          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1734          UA     100
              *
              * ROUTE RA09B IS 2497 FT WITH A SLOPE OF .0012
              * CROSS SECTION IS A SMALL NATURAL CHANNEL
              * *** ROUTE FLOW TO CA09A FROM CA09B  **************************
              *

1735          KK   RA09B
1736          RS      14    FLOW       0
1737          RC    0.05     .06     .05    2497   .0012
1738          RX       0     350     450     480     482     510     610     910
1739          RY       7       6       5       1       0       5       6       7
              *
1                                   HEC-1 INPUT                                                    PAGE 54

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

1740          KK    A09A   BASIN
1741          KM  SUB-BASIN A09A
1742          BA   0.084
1743          LG    0.29    0.15    3.74    0.80      38
1744          UC   0.824   0.737
1745          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1746          UA     100
              *
              * *** Combine  CA09C, A09B, AND A09A ****************************************
              *
```

```
1747          KK   CA09A
1748          HC      3
              *
              * THIS FLOW IS DIVERTED. THERE IS TWO 36" CMP THAT CARRIES
              * FLOW TO THE WEST, AND THE REST FLOWS SOUTH.
              *

1749          KK  DA09AO
1750          DT   A09AI
1751          DI       0      70     140     400     600     800    1000    3000    5000
1752          DQ       0     0.2     0.3     260     460     660     860    2860    4860
              *
              * ROUTE RA09AW IS 5898 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A LARGE NATURAL WASH
              * *** ROUTE THE DIVERTED FLOW TO THE WEST AND SOUTH TO CA09 ********************
              *

1753          KK  RA09AW
1754          RS      15    FLOW       0
1755          RC    0.05     .06     .05    5898  0.0017
1756          RX       0      50     250     310     360     420     620     720
1757          RY      10       8       6       0       0       6       8      10
              *

1758          KK    A99T   BASIN
1759          KM  SUB-BASIN A99T
1760          BA   0.030
1761          LG    0.20    0.30    2.79    1.39      42
1762          UC   0.205   0.056
1763          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1764          UA     100
              *
              * *** STORAGE ROUTING LA99T ***********************************************
              * *** GRAVEL PIT STORAGE (ACCOUNTED) ***************************************
              *

1765          KK   LA99T
1766          DT  LA99TD    0.64
1767          DI       0     100    1000   10000
1768          DQ       0     100    1000   10000
              *
              * ROUTE RA99T IS 886 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS A MEDIUM NATURAL WASH
              * *** ROUTE FLOW TO CA09 FROM CA99T   **************************
              *
```



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

1769          KK   RA99T
1770          RS       5    FLOW       0
1771          RC    0.05     .06     .05     886  0.0023
1772          RX       0      50     250     350     360     420     620     720
1773          RY      10       8       6       2       0       6       8      10
              *

1774          KK     A09   BASIN
1775          KM  SUB-BASIN A09
1776          BA   0.176
1777          LG    0.24    0.31    3.58    0.68      22
1778          UC   0.577   0.239
1779          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1780          UA     100
              *
              * COMBINE RA99T, CA09, AND RA09AW
              *

1781          KK    CA09
1782          HC       3
              *

1783          KK    A99U   BASIN
1784          KM  SUB-BASIN A99U
1785          BA   0.070
1786          LG    0.25    0.30    3.71    0.66      29
1787          UC   0.472   0.467
1788          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1789          UA     100
              *
              * COMBINE CA09, A99U, AND AFR3 at AFR & South of Beardsley Rd.
              *

1790          KK    AFR4
1791          HC       3
              *

1792          KK    A99S   BASIN
1793          KM  SUB-BASIN A99S
1794          BA   0.077
1795          LG    0.35    0.35    3.64    0.59       0
1796          UC   0.862   0.851
1797          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1798          UA     100
              *

1799          KK    A08A   BASIN
1800          KM  SUB-BASIN A08A
1801          BA   0.138
1802          LG    0.20    0.30    3.31    0.77      18
1803          UC   1.054   1.135
1804          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1805          UA     100
              *
              * ROUTE RA08A IS 1747 FT WITH A SLOPE OF .0057
              * CROSS SECTION IS A SMALL NATURAL WASH
              * *** ROUTE FLOW TO CA08 FROM CA08A  **************************
              *
```



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

1806          KK   RA08A
1807          RS       5    FLOW       0
1808          RC    0.05    0.05    0.05    1747  0.0057
1809          RX       0     350     450     480     482     510     610     910
1810          RY       7       6       5       1       0       5       6       7
              *

1811          KK    A99R   BASIN
1812          KM  SUB-BASIN A99R
1813          BA   0.037
1814          LG    0.31    0.31    3.55    0.66      12
1815          UC   0.408   0.237
1816          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1817          UA     100
```

```
                    *
                    * ROUTE RA99R IS 2159 FT WITH A SLOPE OF .0032
                    * CROSS SECTION IS A SMALL NATURAL WASH
                    * *** ROUTE FLOW TO CA08 FROM CA99R  **************************
                    *

1818                KK   RA99R
1819                RS       9    FLOW       0
1820                RC    0.05    0.05    0.05    2159   .0032
1821                RX       0     350     450     480     482     510     610     910
1822                RY       7       6       5       1       0       5       6       7
                    *

1823                KK     A08   BASIN
1824                KM  SUB-BASIN A08
1825                BA   0.077
1826                LG    0.30    0.31    3.19    0.88      14
1827                UC   0.308   0.074
1828                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1829                UA     100
                    *
                    * *** COMBINE A99S, A08, RA99R AND RA08A   *****************
                    *

1830                KK    CA08
1831                HC       4
                    *
                    * *** COMBINE HYDROGRAPHS OF CA08 AND AFR4 at AFR and South of Union Hills Dr.
                    *

1832                KK    AFR5
1833                HC       2
                    *
                    *
1                                                HEC-1 INPUT                                                PAGE 57

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

1834                KK    A07G   BASIN
1835                KM  SUB-BASIN A07G
1836                BA   0.258
1837                LG    0.24    0.16    7.60    0.11      32
1838                UC   0.641   0.425
1839                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1840                UA     100
                    *
                    * *** STORAGE ROUTING LA07G ********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ******************
                    *

1841                KK   LA07G
1842                DT  LA07GD    12.9
1843                DI       0     100    1000   10000
1844                DQ       0     100    1000   10000
                    *
                    * ROUTE RA07G IS 2439 FT WITH A SLOPE OF .0012
                    * CROSS SECTION IS 111TH AVE (MEASURED)
                    * *** ROUTE FLOW FROM CA07G TO CA07E ***********************************
                    *

1845                KK   RA07G
1846                RS       6    FLOW       0
1847                RC    0.04     .02    0.04    2439  0.0012
```



```
1848                RX       0       1      26      41      71      86     126     576
1849                RY      12       7       5       1       1       5       6       7
                    *

1850                KK    A07F   BASIN
1851                KM   SUB-BASIN A07F
1852                BA   0.233
1853                LG    0.21    0.27    4.90    0.32      26
1854                UC   0.949   0.902
1855                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1856                UA     100
                    *
                    * *** ROUTE RA07F IS 2619 FT WITH A SLOPE OF .0042
                    * *** CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07F TO CA07E ***********************************
                    *

1857                KK   RA07F
1858                RS       3    FLOW       0
1859                RC    0.03    0.02    0.03    2619  0.0042
1860                RX       0       1      13      23      53      83     108     109
1861                RY      14       6       0       0       6       6       7      15
                    *
1                                                HEC-1 INPUT                                                PAGE 58

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

1862                KK    A07E   BASIN
1863                KM   SUB-BASIN A07E
1864                BA   0.227
1865                LG    0.23    0.15    7.60    0.11      49
1866                UC   0.567   0.345
1867                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1868                UA     100
                    *
                    * *** COMBINE A07E, RA07G, AND RA07F  *************
                    *

1869                KK   CA07E
1870                HC       3
                    *
                    * ROUTE RA07E IS 1771 FT WITH A SLOPE OF .004
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07E TO CA07C ***********************************
                    *

1871                KK   RA07E
1872                RS       3    FLOW       0
1873                RC    0.03    0.03    0.03    1771   0.004
1874                RX       0     100     112     122     134     154     189     689
1875                RY       8       6       0       0       6       7       7       9
                    *

1876                KK    A07C   BASIN
1877                KM  SUB-BASIN A07C
1878                BA   0.175
1879                LG    0.34    0.31    4.90    0.30       5
1880                UC   0.681   0.462
1881                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1882                UA     100
                    *
                    * *** COMBINE BASIN A07C AND RA07E ************************************
                    *
```

```
1883          KK   CA07C
1884          HC      2
              *
              * ROUTE RA07C IS 1051 FT WITH A SLOPE OF .0067
              * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
              * *** ROUTE FLOW FROM CA07C TO CA07D ***********************************
              *

1885          KK   RA07C
1886          RS      1    FLOW      0
1887          RC   0.03    0.03   0.03    1051  0.0067
1888          RX      0      50     62      72     84    104    139    640
1889          RY      9       6      0       0      6      7      7      9
              *
1                                          HEC-1 INPUT                                                    PAGE 59

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

1890          KK    A07H   BASIN
1891          KM  SUB-BASIN A07H
1892          BA   0.093
1893          LG    0.23    0.21    4.70    0.44     47
1894          UC   0.339   0.165
1895          UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1896          UA    100
              *
              * ROUTE RA07H IS 2386 FT WITH A SLOPE OF .0461
              * CROSS SECTION IS THE FARM FIELDS IN THE AGUA FRIA RIVER (MEASURED)
              * *** ROUTE FLOW FROM CA07H TO CA07D ***********************************
              *

1897          KK   RA07H
1898          RS      3    FLOW      0
1899          RC   0.03    0.03   0.03    2386  0.0461
1900          RX      0      14    125     250    500    800   1000   1014
1901          RY      7       0      0       0      0      0      0      7
              *
              * *** RECOVER DIVERTED FLOW FROM A09AI ***************************************
              *

1902          KK  DA09AI
1903          DR   A09AI
              *

1904          KK  RA09AI
1905          RS     12    FLOW      0
1906          RC   0.03    0.03   0.03    3000   0.002
1907          RX      0      50    100     150    200    250    300    500
1908          RY      7       6      5       5      0      0      5      6
              *

1909          KK    A08B   BASIN
1910          KM  SUB-BASIN A08B
1911          BA   0.099
1912          LG    0.19    0.27    3.74    0.66     35
1913          UC   0.608   0.413
1914          UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1915          UA    100
              *
              * *** COMBINE BASIN A09AI AND R80BE ************************************
              *
```



```
1916          KK   CA08B
1917          HC      2
              *
              * ROUTE RA08B IS 2925 FT WITH A SLOPE OF .001
              * CROSS SECTION IS 115TH AVE (MEASURED)
              * *** ROUTE FLOW FROM CA08B TO CA07D ***********************************
              *
1                                          HEC-1 INPUT                                                    PAGE 60

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

1918          KK   RA08B
1919          RS     12    FLOW      0
1920          RC   0.03    0.03   0.03    2925   0.001
1921          RX      0      50    100     150    200    250    300    500
1922          RY      7       6      5       5      0      0      5      6
              *
              `
1923          KK    A07D   BASIN
1924          KM  SUB-BASIN A07D
1925          BA   0.229
1926          LG    0.49    0.02    4.10    0.67      1
1927          UC   1.327   1.248
1928          UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1929          UA    100
              *
              * *** COMBINE BASIN A07D, RA08B, RA07H, AND RA07C *********************
              *

1930          KK   CA07D
1931          HC      4
              *
              * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
              *

1932          KK   RA07D
1933          RS      6    FLOW      0
1934          RC   0.03    0.03   0.03    4828  0.0017
1935          RX      0     100    112     147    159    179    214    580
1936          RY      8       6      0       0      6      7      7      9
              *

1937          KK    S30D   BASIN
1938          KM  SUB-BASIN S30D
1939          BA   0.131
1940          LG    0.25    0.17    6.80    0.15     30
1941          UC   0.638   0.385
1942          UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1943          UA    100
              *
              * ROUTE RS30D IS 6176 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS 99TH AVENUE
              * *** ROUTE S30D THROUGH S30C ***************************************
              *

1944          KK   RS30D
1945          RS     10    FLOW      0
1946          RC    .02     .02    .02    6176  0.0023
1947          RX      0       1     85      95    109    134    239    240
1948          RY     12       6      5       0      0      5      6     12
              *
1                                          HEC-1 INPUT                                                    PAGE 61
```

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

1949          KK    S30C   BASIN
1950          KM  SUB-BASIN S30C
1951          BA   0.454
1952          LG    0.23    0.15    7.30    0.13      36
1953          UC   0.892   0.703
1954          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1955          UA     100
              *
              * RECOVER DIVERTED FLOW FROM A09FI
              *

1956          KK  DA09FI
1957          DR   A09FI
              *

1958          KK  RA09FI
1959          RS      10    FLOW       0
1960          RC     .02     .02     .02    7000  0.0023
1961          RX       0       1      85      95     109     134     239     240
1962          RY      12       6       5       0       0       5       6      12
              *

1963          KK     XX1
1964          HC       3
              *

1965          KK    S30B   BASIN
1966          KM  SUB-BASIN S30B
1967          BA   0.399
1968          LG    0.19    0.29    5.80    0.21      24
1969          UC   0.995   0.918
1970          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1971          UA     100
              *
              * *** COMBINE BASIN S30C, S30B, AND RS30D ******************************
              *

1972          KK   CS30B
1973          HC       2
              *
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **********************
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *

1974          KK  DS30BO
1975          DT  DS30BI
1976          DI       1     250     550     750    1000    1500    1750    2000
1977          DQ      .1      .2      .3     200     450     950    1200    1450
              *
              * ROUTE RS30BW IS 5060 FT WITH A SLOPE OF .0008
              * CROSS SECTION IS DEL WEBB BLVD
              * *** ROUTED S30BO THROUGH S30A ****************************************
              *
```



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

1978          KK  RS30BW
```



```
1979          RS       9    FLOW       0
1980          RC     .02    0.02     .02    5060  0.0008
1981          RX       0       1     100     120     140     155     239     240
1982          RY      12       6       5       0       0       5       6      12
              *

1983          KK    S30A   BASIN
1984          KM  SUB-BASIN S30A
1985          BA   0.531
1986          LG    0.22    0.21    6.40    0.21      28
1987          UC   1.005   0.674
1988          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1989          UA     100
              *
              * *** COMBINE BASIN S30A AND RS30B ****************************************
              *

1990          KK   CS30A
1991          HC       2
              *
              * ********************************************************************
              * ********************************************************************
              * ******** THE FOLLOWING PORTION WAS EXTRACTED FROM THE GLENDALE/PEORIA
              * ******** ADMPU MODEL CREATED BY ENTELLUS, DATED OCTOBER 21, 2000.
              * ******** FILE NAME: 100yr6hr.DAT
              * ********************************************************************
              * ********************************************************************
              *
              * *** DIVERSION DS30AO ************************************************
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **************************
              *
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *
              * DDM   ***** Preserved *****

1992          KK  DS30AO
1993          DT  DS30AI
1994          DI       1     250     550     750    1000    1500    1750    2000
1995          DQ      .1      .2      .3     200     450     950    1200    1450
              *
              * *** ROUTE RS30AW  ****************************************************
              *
              * ROUTE RS30AW IS 4919 FT WITH A SLOPE OF .0043
              * CROSS SECTION IS DEL WEBB BLVD
              *
              * *** ROUTE FLOW FROM CS30A TO CS30 ************************************
              *
              * DDM   ***** Preserved *****
```



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

1996          KK  RS30AW
1997          RS       5    FLOW       0
1998          RC    0.03    0.02    0.03    4919  0.0043
1999          RX       0       1     110     125     140     155     160     161
2000          RY      15       7       7       0       0       7       7      15
              *
              *
              * DDM   ***** Preserved *****

2001          KK     S30   BASIN
```

```
2002          KM   SUB-BASIN S30
2003          KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
2004          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
2005          KM     L = 1.12  Kb = .040  Adj. Slope =   27.0
2006          BA    .321
2007          LG    0.22    0.26    4.55    0.43      27
2008          UC   0.596   0.436
2009          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2010          UA     100
              *
              * *** COMBINE BASIN S30 AND RS30A ************************************
              *
              * DDM   ***** Preserved *****

2011          KK    CS30
2012          HC       2
              *
              * *** ROUTE RS30  ****************************************************
              *
              * ROUTE RS30 IS 691 FT WITH A SLOPE OF .0058
              * CROSS SECTION IS A CHANNEL ALONG BELL RD (MEASURED)
              *
              * *** ROUTE FLOW FROM CS30 TO CA07B ***********************************
              *
              * DDM   ***** Preserved *****

2013          KK    RS30
2014          RS       1    FLOW       0
2015          RC    0.03    0.02    0.03     691  0.0058
2016          RX       0      26     136     197     212     227     242     742
2017          RY       9       8       8       7       0       0       7       9
              *
              * DDM   ***** Preserved *****
              *
              * *** ROUTE RA07D  ***************************************************
              *
              * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
              *
              * *** ROUTE FLOW FROM CA07D TO CA07B ***********************************
              *
              * DDM   ***** Preserved *****
              * *****KK RA07D
              * *****RS     5    FLOW       0
              * *****RC  0.03    0.03    0.03    4828  0.0017
              * *****RX     0     100     112     147     159     179     214     580
              * *****RY     8       6       0       0       6       7       7       9
              *
              *
              * DDM   ***** Preserved *****
```

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

2018          KK    A07B   BASIN
2019          KM   SUB-BASIN A07B
2020          KM   6-HOUR RAINFALL, PATTERN NO. 1.15 WAS USED TO FIND TC & R FOR THIS BASIN
2021          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
2022          KM     L = 1.58  Kb = .030  Adj. Slope =   41.0
2023          BA    .649
2024          LG    0.16    0.31    4.60    0.34      18
2025          UC   0.533   0.339
2026          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



```
2027          UA     100
              *
              * *** STORAGE ROUTING LA07B ******************************************
              * *** CANYON RIDGE WEST RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
              * DDM   ***** Preserved *****

2028          KK   LA07B
2029          DT  LA07BD    19.2
2030          DI       0     100    1000   10000
2031          DQ       0     100    1000   10000
              *
              *
              * *** COMBINE LA07B, RA07D, AND RS30  *********************************
              *
              * DDM   ***** Preserved *****

2032          KK   CA07B
2033          KO                                      21
2034          HC       3
              *
2035          ZZ
```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

```
 INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   73         CBA
                V
                V
   80        RCBA
                .
                .
   83           .         P28
                .           .
                .           .
   90        CP28............
                .
                .
   95           .------->    DB28
   93        DT28
                .
                .
   98           .         CBB
                .           V
                .           V
  105           .        RCBB
                .           .
                .           .
  108       CP28a...........
                V
                V
  111        R28a
                .
                .
  114           .         P27
                .           .
                .           .
  123           .           .------->    DB27
  121           .        DT27
                .           .
                .           .
  126       CP27............
```

```
                .
                .
129             .        P27A
                .          .
                .          .
138             .          .-------->   DB27a
136             .      DT27a
                .          .
                .          .
141             .          .       P27B
                .          .         .
                .          .         .
150             .          .         .-------->   DB27b
148             .          .      DT27b
                .          .         .
                .          .         .
153             .          .         .        CBL
                .          .         .          .
                .          .         .          .
160          CCBL...................................
                V
                V
163          RCBL
                .
                .
168             .        CBK
                .          .
                .          .
175          CCBK............
                V
                V
178          RCBK
                .
                .
181             .        P14
                .          .
                .          .
190             .          .-------->    RB14
188             .      RT14
                .          .
                .          .
193          CP14............
                .
                .
196             .        P15
                .          .
                .          .
205             .          .-------->    DB15
203             .      DT15
                .          .
                .          .
208             .          .        CBJ
                .          .         .
                .          .         .
215          CP15........................
                V
                V
218           R15
                .
                .
221             .        CBH
                .          V
                .          V
228             .      RCBH
```



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                .          .
                .          .
233             .          .       P25S
                .          .         .
                .          .         .
240             .      CP25S............
                .          .
                .          .
243          AFR0............
                .
                .
246             .         E1
                .          V
                .          V
253             .        RE1
                .          .
                .          .
256             .          .         E2
                .          .          V
                .          .          V
263             .          .        RE2
                .          .         .
                .          .         .
266             .          .         .        P13
                .          .         .          .
                .          .         .          .
275             .          .         .          .-------->    DB13
273             .          .         .       DT13
                .          .         .          .
                .          .         .          .
278             .      CP13........................
                .          V
                .          V
281             .        R13
                .          .
                .          .
284             .          .        P12
                .          .         .
                .          .         .
293             .          .         .-------->    DB12
291             .          .       DT12
                .          .         .
                .          .         .
296             .      CP12............
                .          .
                .          .
299             .          .         E3
                .          .          V
                .          .          V
306             .          .        RE3
                .          .         .
                .          .         .
309             .          .         .        P10
                .          .         .          .
                .          .         .          .
318             .          .         .          .-------->    DB10
316             .          .         .       DT10
                .          .         .          .
                .          .         .          .
321             .          .       CP10............
                .          .         V
                .          .         V
324             .          .        R10
                .          .         .
```

```
327                                  P11
                                      .
336                                   .-------> DB11
334                                 DT11
                                      .
339                            CP11.........
                                      .
342                                   E4
                                      V
                                      V
349                                 RE4
                                      .
356                                   .          P9
                                      .           .
365                                   .           .-------> DB9
363                                   .         DT9
                                      .           .
368                                   .           .        HV1
                                      .           .         .
375                                 CP9.......................
                                      V
                                      V
378                                   R9
                                      .
385                                   .          P8
                                      .           .
394                                   .           .-------> DB8
392                                   .         DT8
                                      .           .
397                                   .           .         P7
                                      .           .         .
406                                   .           .         .-------> DB7
404                                   .           .        DT7
                                      .           .         .
409                                 CP7.......................
                                      V
                                      V
412                                   R7
                                      .
418                                   .          P6
                                      .           .
427                                   .           .-------> DB6
425                                   .         DT6
                                      .           .
430                                 CP6............
                                      .
433                        HPVLY......................
```



```
436                          A11MA
                                .
444                             .-------> DA11MA
443                        A11MAQ
                                V
                                V
447                        SA11MA
                                V
                                V
454                        RA11MA
                                .
459                             .      A11MB
                                .        .
467                             .        .-------> DA11MB
466                             .     A11MBQ
                                .        V
                                .        V
470                             .     SA11MB
                                .        .
477                             .        .      A11NA
                                .        .        V
                                .        .        V
484                             .        .     SA11NA
                                .        .        V
                                .        .        V
491                             .        .     RA11NA
                                .        .        .
496                        CA11MB.......................
                                V
                                V
498                        RA11MB
                                .
503                             .      A11O
                                .        V
                                .        V
510                             .     SA11O
                                .        V
                                .        V
517                             .     RA11O
                                .        .
522                             .        .      A11KB
                                .        .        V
                                .        .        V
529                             .        .     SA11KB
                                .        .        .
536                             .        .        .      A11KA
                                .        .        .        V
                                .        .        .        V
543                             .        .        .     SA11KA
                                .        .        .        V
                                .        .        .        V
550                             .        .        .     RA11KA
                                .        .        .        .
```

```
555          .          .          .     CA11KB.......................
             .          .          .          V
             .          .          .          V
557          .          .          .     RA11KB
             .          .          .          .
             .          .          .          .
562          .          .          .          .        A11G
             .          .          .          .          V
             .          .          .          .          V
569          .          .          .          .      RA11GN
             .          .          .          .          .
             .          .          .          .          .
574          .          .          .          .          .       A11KC
             .          .          .          .          .         V
             .          .          .          .          .         V
581          .          .          .          .          .      SA11KC
             .          .          .          .          .          .
             .          .          .          .          .          .
588          .          .          .     CA11KC.......................
             .          .          .          V
             .          .          .          V
590          .          .          .     RA11KC
             .          .          .          .
             .          .          .          .
595          .          .          .          .        A11J
             .          .          .          .          V
             .          .          .          .          V
602          .          .          .          .       SA11J
             .          .          .          .          .
             .          .          .          .          .
609          .          .       CA11J........................
             .          .          .
             .          .          .
611          .          .          .       A11L
             .          .          .          .
             .          .          .          .
619          .          .          .          .-------->   DA11L
618          .          .          .     DA11LQ
             .          .          .          V
             .          .          .          V
622          .          .          .      RA11L
             .          .          .          .
             .          .          .          .
627          .          .          .          .        A11I
             .          .          .          .          .
             .          .          .          .          .
635          .          .          .          .          .-------->   DA11I
634          .          .          .          .      DA11IQ
             .          .          .          .          .
             .          .          .          .          .
638          .          .       CA11I........................
             .          .          V
             .          .          V
640          .          .       RA11I
             .          .          .
             .          .          .
645          .          .          .      A11EA
             .          .          .          V
             .          .          .          V
652          .          .          .     RA11EA
             .          .          .          .
             .          .          .          .
657          .          .          .          .       A11EB
             .          .          .          .          .
```



```
664          .          .       CA11EB.......................
             .          .          .
             .          .          .
666          .          .          .         41
             .          .          .          V
             .          .          .          V
673          .          .          .        B41
             .          .          .          .
             .          .          .          .
680          .          .          .          .          42
             .          .          .          .           V
             .          .          .          .           V
687          .          .          .          .         B42
             .          .          .          .          .
             .          .          .          .          .
694          .          .          .        C41............
             .          .          .          V
             .          .          .          V
696          .          .          .       RC41
             .          .          .          .
             .          .          .          .
701          .          .          .          .        A11F
             .          .          .          .          .
             .          .          .          .          .
708          .          .          .      CA11F............
             .          .          .          .
             .          .          .          .
710          .          .       CA11E............
             .          .          V
             .          .          V
712          .          .       RA11E
             .          .          .
             .          .          .
717          .          .          .       A09U
             .          .          .          .
             .          .          .          .
725          .          .          .          .-------->   A09UI
724          .          .          .      DA09U
             .          .          .          V
             .          .          .          V
728          .          .          .     RA09UW
             .          .          .          .
             .          .          .          .
733          .          .          .          .        A09T
             .          .          .          .          .
             .          .          .          .          .
740          .          .          .      CA09T............
             .          .          .          .
             .          .          .          .
743          .          .          .          .-------->   A09TI
742          .          .          .      DA09T
             .          .          .          V
             .          .          .          V
746          .          .          .     RA09TW
             .          .          .          .
             .          .          .          .
751          .          .          .          .        A11A
             .          .          .          .          .
             .          .          .          .          .
759          .          .          .          .          .-------->   DA11A
758          .          .          .          .      DA11AQ
             .          .          .          .          .
             .          .          .          .          .
```

```
762          .          .        CX23.......................
             .          .          V
             .          .          V
764          .          .        RX23
             .          .          .
             .          .          .
769          .          .          .          S1
             .          .          .           .
             .          .          .           .
776          .          .          .           .          P2
             .          .          .           .           .
             .          .          .           .           .
785          .          .          .           .           .-------->     RB2
783          .          .          .           .         RT2
             .          .          .           .           .
             .          .          .           .           .
788          .          .        CS1.......................
             .          .          V
             .          .          V
791          .          .        RS1
             .          .          .
             .          .          .
794          .          .          .          S2
             .          .          .           .
             .          .          .           .
801          .          .          .           .          S3
             .          .          .           .           .
             .          .          .           .           .
808          .          .        CS2.......................
             .          .          V
             .          .          V
811          .          .        RS2
             .          .          .
             .          .          .
814          .          .          .          P3
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823          .          .          .           .-------->     RB3
821          .          .          .         RT3
             .          .          .           .
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826          .          .        CP3............
             .          .          .
             .          .          .
829          .          .          .         P4b
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             .          .          .           .
838          .          .          .           .-------->    RB4b
836          .          .          .       RT4b
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             .          .          .           .
841          .          .          .           .          S4
             .          .          .           .           .
             .          .          .           .           .
848          .          .          .           .           .          P1
             .          .          .           .           .           .
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857          .          .          .           .           .           .-------->     DB1
855          .          .          .           .           .         DT1
             .          .          .           .           .           .
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860          .          .          .           .         CP1............
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863          .          .          .           .           .         HV2
             .          .          .           .           .          V
             .          .          .           .           .          V
870          .          .          .           .           .        RHV2
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             .          .          .           .           .           .
875          .          .          .           .           .           .-------->   DBHV2
873          .          .          .           .           .       DTHV2
             .          .          .           .           .           .
             .          .          .           .           .           .
878          .          .          .           .           .           .          P4a
             .          .          .           .           .           .           .
             .          .          .           .           .           .           .
887          .          .          .           .           .           .           .-------->    DB4a
885          .          .          .           .           .           .        DT4a
             .          .          .           .           .           .           .
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890          .          .       SOUTH.............................................
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893          .          .          .        N11O
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901          .          .          .           .-------->   N11OI
900          .          .          .      DN11O
             .          .          .          V
             .          .          .          V
904          .          .          .     RN11OW
             .          .          .           .
             .          .          .           .
910          .          .          .           .           .<-------   A09TI
909          .          .          .           .     DRA09T
             .          .          .           .          V
             .          .          .           .          V
911          .          .          .           .     RA09TS
             .          .          .           .           .
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916          .          .          .           .           .        A09R
             .          .          .           .           .           .
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923          .          .          .      CA09R.......................
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926          .          .          .           .-------->   A09RI
925          .          .          .      DA09R
             .          .          .          V
             .          .          .          V
929          .          .          .     RA09RW
             .          .          .           .
             .          .          .           .
934          .          .          .           .        A09S
             .          .          .           .           .
             .          .          .           .           .
942          .          .          .           .           .-------->   DA09S
941          .          .          .           .     DA09SQ
             .          .          .           .           .
             .          .          .           .           .
945          .          .          .      CA09S............
             .          .          .          V
             .          .          .          V
947          .          .          .     RA09SW
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952          .          .          .           .      A09QA
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959             .          .          .      CA09QA............
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962             .          .          .          .-------> A09QAI
961             .          .          .      DA09QA
                .          .          .          V
                .          .          .          V
965             .          .          .      RA09QW
                .          .          .          .
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970             .          .          .          .      A99YA
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977             .          .          .      CA99YA............
                .          .          .          V
                .          .          .          V
979             .          .          .      RA99YA
                .          .          .          .
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984             .          .          .          .      A99YB
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991             .          .      CA99YB........................
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993         AFR1........................
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996             .          .<-------  A09UI
995             .     BA09UI
                .          V
                .          V
997             .     RA09US
                .          .
                .          .
1002            .          .      N11NB
                .          .          .
                .          .          .
1009            .     CN11NB............
                .          V
                .          V
1011            .     RN11NW
                .          .
                .          .
1017            .          .          .<-------  N11OI
1016            .          .      BN11OI
                .          .          V
                .          .          V
1018            .          .      RN11OS
                .          .          .
                .          .          .
1023            .          .          .      N11M
                .          .          .          .
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1030            .      CN11M........................
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1033            .          .-------> N11MI
1032            .      DN11M
                .          V
                .          V
1036            .     RN11MS
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1041            .          .      N11J
                .          .          .
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1049            .          .          .-------> LN11JD
1048            .          .      LN11J
                .          .          .
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1052            .      CN11J............
                .          .
                .          .
1055            .          .-------> N11JI
1054            .      DN11J
                .          V
                .          V
1058            .     RN11JW
                .          .
                .          .
1064            .          .          .<-------  N11MI
1063            .          .      DRN11M
                .          .          V
                .          .          V
1065            .          .      RN11MW
                .          .          .
                .          .          .
1070            .        CX4............
                .          V
                .          V
1072            .        RX4
                .          .
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1077            .          .      A09O
                .          .          V
                .          .          V
1084            .          .      SA09O
                .          .          .
                .          .          .
1092            .          .          .          .<-------  A09RI
1091            .          .          .      BA09RI
                .          .          .          V
                .          .          .          V
1093            .          .          .      RA09RS
                .          .          .          .
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1098            .      CA09O........................
                .          .
                .          .
1101            .          .-------> A09OI
1100            .      DA09O
                .          V
                .          V
1104            .     RA09OW
                .          .
                .          .
1109            .          .      A09P
                .          .          V
                .          .          V
1116            .          .      SA09P
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1123            .      CA09P............
                .          V
                .          V
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1125          .      RA09P
              .          .
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1131          .          .          .<-------  A09QAI
1130          .          .     BA09QA
              .          .          V
              .          .          V
1132          .          .     RA09QB
              .          .          .
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1137          .          .          .      A09QB
              .          .          .          .
              .          .          .          .
1144          .      CA09Q.......................
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              .          .
1147          .          .------->  A09QI
1146          .      DA09Q
              .          V
              .          V
1150          .     RA09QW
              .          .
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1155          .          .       A10A
              .          .          .
              .          .          .
1162          .      CA10A............
              .          V
              .          V
1164          .      RA10A
              .          .
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1169          .          .       A99X
              .          .          .
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1176          .      CA99X............
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              .          .
1178       AFR2............
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1181          .          .<-------  A09OI
1180          .     BA09OI
              .          V
              .          V
1182          .     RA09OS
              .          .
              .          .
1187          .          .       A09K
              .          .          .
              .          .          .
1199          .          .          .------->  A09KI
1194          .          .     DA09K
              .          .          .
              .          .          .
1202          .        CX7............
              .          V
              .          V
1205          .       RX7S
              .          .
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1214          .          .     N11NA
              .          .          V
              .          .          V
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1221          .          .     RN11NA
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1226          .          .          .      N11NC
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1233          .          .    CN11NC............
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              .          .          .
1237          .          .          .------->  N11NP
1235          .          .    DN11NC
              .          .          V
              .          .          V
1240          .          .    RN11NC
              .          .          .
              .          .          .
1246          .          .          .      N11ND
              .          .          .          .
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1253          .          .          .          .       N11K
              .          .          .          .         .
              .          .          .          .         .
1260          .          .     CN11K........................
              .          .          .
              .          .          .
1264          .          .          .------->  N11KP
1263          .          .    DN11KS
              .          .          V
              .          .          V
1267          .          .     RN11K
              .          .          .
              .          .          .
1273          .          .          .------->    X5I
1272          .          .       DX5
              .          .          V
              .          .          V
1276          .          .      RX5W
              .          .          .
              .          .          .
1281          .          .          .       N11H
              .          .          .          .
              .          .          .          .
1288          .          .    CN11H............
              .          .          V
              .          .          V
1290          .          .    RN11H
              .          .          .
              .          .          .
1300          .          .          .          .<-------   N11JI
1299          .          .          .     BN11JI
              .          .          .          V
              .          .          .          V
1301          .          .          .     RN11JS
              .          .          .          .
              .          .          .          .
1306          .          .          .          .       N11G
              .          .          .          .         .
              .          .          .          .         .
1313          .          .    CN11G........................
              .          .          V
              .          .          V
1315          .          .    RN11G
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1324                                  N11DA
                                        .
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1332                                    .-------> LDAOUT
1331                                LN11DA
                                        V
                                        V
1335                                SN11DA
                                        .
                                        .
1344                                    .-------> D11DAS
1342                                N11DAW
                                        V
                                        V
1347                                RN11DA
                                        .
                                        .
1356                                        N11FB
                                                .
                                                .
1366                                            .-------> LN1FBD
1363                                        LN11FB
                                                .
                                                .
1369                                CN11FB............
                                        .
                                        .
1372                            C98RGL............
                                    V
                                    V
1375                            RN11FB
                                        .
                                        .
1387                                    .<-------   A09KI
1384                                DRA09K
                                        V
                                        V
1388                                RA09KS
                                        .
                                        .
1397                                        N11FA
                                                .
                                                .
1406                                            .-------> LN1FAD
1403                                        LN11FA
                                                .
                                                .
1409                                            .       A09GA
                                                .           .
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1418                                            .           .-------> L09GAD
1415                                            .       LA09GA
                                                .           .
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1421                            CN11FA...................................
                                    V
                                    V
1424                            RN11FA
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1433                                  A09GB
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1443                                    .-------> L09GBD
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1440                                LA09GB
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1446                            CA09G............
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1450                                    .------->   A09GI
1449                            DA09G
                                    V
                                    V
1453                            RA09GW
                                        .
                                        .
1462                        CX8............
                                V
                                V
1464                        RX8W
                                .
                                .
1473                            .       A09H
                                        .
                                        .
1483                                    .-------> LA09HD
1480                            LA09H
                                        .
                                        .
1486                        CA09H1............
                                .
                                .
1489                            .       A09J
                                        .
                                        .
1497                                    .-------> LA09JD
1496                            LA09J
                                        .
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1501                                    .------->   A09JI
1500                            DA09J
                                    V
                                    V
1504                            RA09JS
                                        .
                                        .
1509                        CA09H............
                                V
                                V
1512                        RA09H
                                .
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1518                            .<-------   A09QI
1517                            BA09QI
                                    V
                                    V
1519                            RA09QS
                                        .
                                        .
1524                            .       A09M
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                                        .
1532                                    .-------> LA09MD
1531                            .       LA09M
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1535                            CA09M............
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                                                  V
                                                  V
1537                                        RA09M
                                                  .
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1542                                              .        A09N
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1549                                        CA09N............
                                                  V
                                                  V
1551                                        LA09N
                                                  V
                                                  V
1556                                        RA09N
                                                  .
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1562                                              .          .<-------   A09JI
1561                                              .      DRA09J
                                                  .          V
                                                  .          V
1563                                              .      RA09JW
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1568                                              .          .        A09L
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1575                                        CA09L......................
                                                  V
                                                  V
1577                                        LA09L
                                                  V
                                                  V
1582                                        RA09LS
                                                  .
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1587                                              .       A09IH
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1595                                        CA09IH...........
                                                  V
                                                  V
1597                                        LA09IH
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1602                                              .        A09I
                                                  .          .
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1610                                              .          .-------> LA09ID
1609                                              .       LA09I
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1613                                     CX10......................
                                            V
                                            V
1615                                     RX10
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1620                                        .        A99V
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1627                                     CA99V...........
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1629                                        .        A10
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1636                                        .          .        A99W
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1644                                        .          .          .-------> LA99WD
1643                                        .          .       LA99W
                                            .          .          .
1647                                        .          .          .
                                 AFR3...................................
                                            .
1650                                        .<-------   A09GI
1649                                     DRA09G
                                            V
                                            V
1651                                     RA09GS
                                            .
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1656                                        .        A09F
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1664                                        .          .-------> LA09FD
1663                                        .        LA09F
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1667                                     CA09F...........
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1670                                        .------->   A09FI
1669                                     DA09F
                                            V
                                            V
1673                                     RA09FW
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1678                                        .        A09E
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1686                                        .          .-------> LA09ED
1685                                        .        LA09E
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1689                                     CA09E...........
                                            V
                                            V
1691                                     RA09E
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1696                                        .        A09D
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1704                                        .          .-------> LA09DD
1703                                        .        LA09D
                                            .          .
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1707                                     CA09C*..........
                                            V
                                            V
1709                                     RA09C*
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1714                                        .        A09C
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1721                  CA09C............
                        V
                        V
1723                  RA09C
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1728                                A09B
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                                      V
1735                                RA09B
                                                                  .
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1740                                                        A09A
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1747                  CA09A.......................
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1750                                -------->   A09AI
1749                DA09AO
                        V
                        V
1753                RA09AW
                                                                  .
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1758                                A99T
                                                                  .
                                                                  .
1766                                                        -------> LA99TD
1765                                LA99T
                                      V
                                      V
1769                                RA99T
                                                                  .
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1774                                                        A09
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1781                  CA09........................
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1783                                A99U
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1790        AFR4........................
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1792                  A99S
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1799                                A08A
                                      V
                                      V
1806                                RA08A
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1811                                                        A99R
                                                                  V
                                                                  V
1818                                                        RA99R
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1823                                                                A08
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1830                  CA08...................................
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1832        AFR5............
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1834                  A07G
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1842                                -------> LA07GD
1841                LA07G
                        V
                        V
1845                RA07G
                                                                  .
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1850                                A07F
                                      V
                                      V
1857                                RA07F
                                                                  .
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1862                                                        A07E
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1869                  CA07E........................
                        V
                        V
1871                RA07E
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1876                                A07C
                                                                  .
                                                                  .
1883                  CA07C............
                        V
                        V
1885                RA07C
                                                                  .
                                                                  .
1890                                A07H
                                      V
                                      V
1897                                RA07H
                                                                  .
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1903                                                        <-------   A09AI
1902                                                    DA09AI
                                                                  V
                                                                  V
1904                                                    RA09AI
                                                                  .
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1909                                                              .       A08B
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1916                                                    CA08B............
                                                                  V
                                                                  V
1918                                                    RA08B
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1923          .          .          .          .       A07D
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1930          .      CA07D..........................
              .          V          .          .          .
              .          V
1932          .      RA07D
              .          .
              .          .
1937          .          .      S30D
              .          .         V
              .          .         V
1944          .          .     RS30D
              .          .          .
1949          .          .          .       S30C
              .          .          .          .
              .          .          .          .
1957          .          .          .          .          .<-------   A09FI
1956          .          .          .          .     DA09FI
              .          .          .          .          V
              .          .          .          .          V
1958          .          .          .          .     RA09FI
              .          .          .          .          .
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1963          .          .       XX1........................
              .          .          .
1965          .          .          .       S30B
              .          .          .          .
              .          .          .          .
1972          .          .     CS30B............
              .          .          .
              .          .          .
1975          .          .          .-------> DS30BI
1974          .          .     DS30BO
              .          .         V
              .          .         V
1978          .          .     RS30BW
              .          .          .
              .          .          .
1983          .          .          .       S30A
              .          .          .          .
              .          .          .          .
1990          .          .     CS30A............
              .          .          .
              .          .          .
1993          .          .          .-------> DS30AI
1992          .          .     DS30AO
              .          .         V
              .          .         V
1996          .          .     RS30AW
              .          .          .
              .          .          .
2001          .          .          .        S30
              .          .          .          .
              .          .          .          .
2011          .          .      CS30............
              .          .         V
              .          .         V
2013          .          .      RS30
              .          .          .
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2018          .          .          .       A07B
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              .          .          .          .
2029          .          .          .          .-------> LA07BD
2028          .          .          .      LA07B
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2032          .      CA07B........................
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
****************************************
 *                                      *                                          *
   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                          *   U.S. ARMY CORPS OF ENGINEERS
   *
 *              JUN   1998              *                                          *   HYDROLOGIC ENGINEERING
CENTER    *
 *           VERSION 4.1                *                                          *         609 SECOND STREET
   *
 *                                      *                                          *      DAVIS, CALIFORNIA 95616
   *
 *  RUN DATE   02JUN10  TIME  13:42:04  *                                          *          (916) 756-1104
   *
 *                                      *                                          *
   *
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Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 100 Years
                                                                              **
107th Avenue and Union Hills Drive Design Concept Report                      **
                                                                              **

PROJECT NO.: FCD 2009C036                    G&M: 10388A                      **
                                                                              **

Original HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                  **
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
Modified HEC-1 Model: BASE100-6.DAT, Goodwin & Marshall, Inc., May29, 2010**
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
                                                                              **

1) NOAA2 Rainfall Data                                                        **

2) DDMSW V3.5.7 Used                                                          **

                                                                              **

*******************************************************************************
Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 100 Years
                                                                              **
Glendale/Peoria ADMP Northwest Region Update                                  **
Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                 **
                      REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS              **
Modified HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                  **
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
1) NOAA 2 Rainfall Data                                                       **
2) DDMSW MCUHP1 V3.3.2 Used                                                   **
                                                                              **
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**********************************************************************
**                                                                  **
** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS  **
** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY        **
** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005   **
** THIS IS THE PREFERRED ALTERNATIVE MODEL                          **
** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS    **
** USING LATEST SURVEY DATA.                                        **
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**                    Glendale/Peoria ADMP Update                   **
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PROJECT:                Glendale Peoria ADMP Update
CLIENT:                 Flood Control District of Maricopa County
PREPARED BY:            Entellus, Inc.
PROJECT No:             FCD 99-44              Entellus 310.017
FILE NAME: LEVEL3.DAT                 CREATED DATE: JUNE 6, 2001
STORM:                  100-year 6-hour Storm
DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY

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

   IT        HYDROGRAPH TIME DATA
                 NMIN          2  MINUTES IN COMPUTATION INTERVAL
                IDATE      1   0  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      2   0  ENDING DATE
              NDTIME       0918  ENDING TIME
              ICENT          19  CENTURY MARK

           COMPUTATION INTERVAL     .03 HOURS
                TOTAL TIME BASE   33.30 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

53 JD        INDEX STORM NO. 1
                STRM        3.20  PRECIPITATION DEPTH
                TRDA         .01  TRANSPOSITION DRAINAGE AREA

54 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
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .01       .01       .01
                .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                .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

57 JD        INDEX STORM NO. 2
                STRM        3.18  PRECIPITATION DEPTH
                TRDA         .50  TRANSPOSITION DRAINAGE AREA

58 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       .01       .01       .01
                .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                .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

61 JD        INDEX STORM NO. 3
                STRM        3.12  PRECIPITATION DEPTH
                TRDA        2.80  TRANSPOSITION DRAINAGE AREA

62 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
                .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .03       .03       .03       .03       .03
                .03       .03       .03       .03       .03       .03       .03       .03       .03       .03
                .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                .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

65 JD        INDEX STORM NO. 4
                STRM        2.95  PRECIPITATION DEPTH
                TRDA       16.00  TRANSPOSITION DRAINAGE AREA

66 PI          PRECIPITATION PATTERN
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                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                .00      .00      .00      .00      .00      .00      .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      .01      .01      .01      .01      .01      .01      .01      .01      .01
                .01      .01      .01      .01      .01      .02      .02      .02      .02      .02
                .02      .02      .02      .03      .03      .03      .03      .03      .03      .03
                .02      .02      .02      .02      .02      .02      .02      .01      .01      .01
                .01      .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

 69 JD        INDEX STORM NO. 5
                  STRM        2.60  PRECIPITATION DEPTH
                  TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 70 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
                .01      .01      .01      .01      .01      .01      .01      .01      .01      .01
                .01      .01      .01      .01      .01      .02      .02      .02      .02      .02
                .02      .02      .02      .02      .02      .02      .02      .02      .02      .02
                .02      .02      .02      .02      .02      .02      .02      .01      .01      .01
                .01      .01      .01      .01      .01      .01      .01      .01      .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
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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            *            *
 2032 KK    *     CA07B  *
            *            *
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 2033 KO        OUTPUT CONTROL VARIABLES
                IPRNT           5  PRINT CONTROL
                IPLOT           0  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                 IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
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                ISAV2        1000  LAST ORDINATE PUNCHED OR SAVED
                TIMINT       .033  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
        OPERATION        STATION     FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR
        HYDROGRAPH AT
+                            CBA      16.    4.10          1.          0.          0.       .01
        ROUTED TO
+                           RCBA      16.    4.20          1.          0.          0.       .01
        HYDROGRAPH AT
+                            P28      56.    4.13          7.          2.          1.       .03
        2 COMBINED AT
+                           CP28      70.    4.13          9.          2.          2.       .03
        DIVERSION TO
+                           DB28      55.    4.03          2.          1.          0.       .03
        HYDROGRAPH AT
+                           DT28      70.    4.13          6.          2.          1.       .03
        HYDROGRAPH AT
+                            CBB      40.    4.07          3.          1.          1.       .02
        ROUTED TO
+                           RCBB      40.    4.10          3.          1.          1.       .02
        2 COMBINED AT
+                          CP28a     110.    4.13          9.          2.          2.       .05
        ROUTED TO
+                           R28a      93.    4.30          9.          2.          2.       .05
        HYDROGRAPH AT
+                            P27     107.    4.17         17.          4.          3.       .06
        DIVERSION TO
+                           DB27      54.    3.93          3.          1.          0.       .06
        HYDROGRAPH AT
+                           DT27     107.    4.17         14.          3.          3.       .06
        2 COMBINED AT
+                           CP27     191.    4.27         23.          6.          4.       .12
        HYDROGRAPH AT
+                           P27A      16.    4.07          2.          0.          0.       .01
        DIVERSION TO
+                          DB27a       9.    3.90          0.          0.          0.       .01
        HYDROGRAPH AT
+                          DT27a      16.    4.07          1.          0.          0.       .01
        HYDROGRAPH AT
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+	P27B	24.	4.10	3.	1.	1.	.01
+ DIVERSION TO	DB27b	10.	3.87	1.	0.	0.	.01
+ HYDROGRAPH AT	DT27b	24.	4.10	3.	1.	0.	.01
+ HYDROGRAPH AT	CBL	54.	4.10	6.	2.	1.	.03
+ 4 COMBINED AT	CCBL	260.	4.23	33.	8.	6.	.16
+ ROUTED TO	RCBL	260.	4.30	33.	8.	6.	.16
+ HYDROGRAPH AT	CBK	108.	4.17	9.	2.	2.	.05
+ 2 COMBINED AT	CCBK	344.	4.23	41.	10.	7.	.22
+ ROUTED TO	RCBK	341.	4.27	41.	10.	7.	.22
+ HYDROGRAPH AT	P14	16.	4.10	1.	0.	0.	.01
+ DIVERSION TO	RB14	16.	4.10	1.	0.	0.	.01
+ HYDROGRAPH AT	RT14	0.	.00	0.	0.	0.	.01
+ 2 COMBINED AT	CP14	341.	4.27	41.	10.	7.	.22
+ HYDROGRAPH AT	P15	5.	4.30	1.	0.	0.	.01
+ DIVERSION TO	DB15	5.	4.30	1.	0.	0.	.01
+ HYDROGRAPH AT	DT15	2.	4.80	0.	0.	0.	.01
+ HYDROGRAPH AT	CBJ	29.	4.13	2.	1.	0.	.01
+ 3 COMBINED AT	CP15	363.	4.23	44.	11.	8.	.25
+ ROUTED TO	R15	362.	4.27	44.	11.	8.	.25
+ HYDROGRAPH AT	CBH	34.	4.07	2.	1.	0.	.01
+ ROUTED TO	RCBH	30.	4.13	2.	1.	0.	.01
+ HYDROGRAPH AT	P25S	36.	4.20	5.	1.	1.	.03

+ 2 COMBINED AT	CP25S	64.	4.13	7.	2.	1.	.04
+ 2 COMBINED AT	AFR0	415.	4.23	51.	13.	9.	.29
+ HYDROGRAPH AT	E1	32.	4.07	2.	0.	0.	.01
+ ROUTED TO	RE1	32.	4.13	2.	0.	0.	.01
+ HYDROGRAPH AT	E2	28.	4.10	3.	1.	0.	.02
+ ROUTED TO	RE2	28.	4.13	3.	1.	0.	.02
+ HYDROGRAPH AT	P13	125.	4.10	11.	3.	2.	.06
+ DIVERSION TO	DB13	43.	3.87	2.	1.	0.	.06
+ HYDROGRAPH AT	DT13	125.	4.10	9.	2.	2.	.06
+ 3 COMBINED AT	CP13	182.	4.10	14.	3.	2.	.09
+ ROUTED TO	R13	178.	4.17	14.	3.	2.	.09
+ HYDROGRAPH AT	P12	69.	4.17	8.	2.	2.	.04
+ DIVERSION TO	DB12	53.	4.03	2.	1.	0.	.04
+ HYDROGRAPH AT	DT12	69.	4.17	6.	2.	1.	.04
+ 2 COMBINED AT	CP12	246.	4.17	20.	5.	4.	.13
+ HYDROGRAPH AT	E3	74.	4.40	12.	3.	2.	.08
+ ROUTED TO	RE3	74.	4.43	12.	3.	2.	.08
+ HYDROGRAPH AT	P10	98.	4.13	11.	3.	2.	.05
+ DIVERSION TO	DB10	46.	3.93	2.	1.	0.	.05
+ HYDROGRAPH AT	DT10	98.	4.13	9.	2.	2.	.05
+ 2 COMBINED AT	CP10	142.	4.20	21.	5.	4.	.14

+	ROUTED TO	R10	141.	4.33	21.	5.	4.	.14
+	HYDROGRAPH AT	P11	39.	4.30	8.	2.	2.	.04
+	DIVERSION TO	DB11	39.	4.27	2.	1.	0.	.04
+	HYDROGRAPH AT	DT11	39.	4.33	6.	1.	1.	.04
+	2 COMBINED AT	CP11	180.	4.33	27.	7.	5.	.18
+	HYDROGRAPH AT	E4	33.	4.37	6.	1.	1.	.04
+	ROUTED TO	RE4	33.	4.40	6.	1.	1.	.04
+	HYDROGRAPH AT	P9	82.	4.10	9.	2.	2.	.05
+	DIVERSION TO	DB9	45.	3.93	2.	0.	0.	.05
+	HYDROGRAPH AT	DT9	82.	4.10	7.	2.	1.	.05
+	HYDROGRAPH AT	HV1	6.	4.30	1.	0.	0.	.01
+	3 COMBINED AT	CP9	104.	4.13	14.	4.	3.	.09
+	ROUTED TO	R9	104.	4.17	14.	4.	3.	.09
+	HYDROGRAPH AT	P8	14.	4.23	3.	1.	0.	.01
+	DIVERSION TO	DB8	12.	4.10	1.	0.	0.	.01
+	HYDROGRAPH AT	DT8	14.	4.23	2.	1.	0.	.01
+	HYDROGRAPH AT	P7	17.	4.20	3.	1.	1.	.01
+	DIVERSION TO	DB7	13.	4.07	1.	0.	0.	.01
+	HYDROGRAPH AT	DT7	17.	4.20	2.	1.	0.	.01
+	3 COMBINED AT	CP7	135.	4.17	18.	5.	3.	.12
+	ROUTED TO	R7	134.	4.20	18.	5.	3.	.12
	HYDROGRAPH AT							

+		P6	46.	4.50	14.	4.	3.	.07
+	DIVERSION TO	DB6	45.	4.40	4.	1.	1.	.07
+	HYDROGRAPH AT	DT6	46.	4.50	11.	3.	2.	.07
+	2 COMBINED AT	CP6	145.	4.47	29.	7.	5.	.19
+	3 COMBINED AT	HPVLY	498.	4.20	75.	19.	14.	.50
+	HYDROGRAPH AT	A11MA	207.	4.07	17.	4.	3.	.07
+	DIVERSION TO	DA11MA	182.	4.00	7.	2.	1.	.07
+	HYDROGRAPH AT	A11MAQ	207.	4.07	10.	2.	2.	.07
+	ROUTED TO	SA11MA	30.	4.47	10.	2.	2.	.07
+	ROUTED TO	RA11MA	30.	4.70	10.	2.	2.	.07
+	HYDROGRAPH AT	A11MB	494.	4.10	51.	13.	9.	.19
+	DIVERSION TO	DA11MB	142.	3.77	7.	2.	1.	.19
+	HYDROGRAPH AT	A11MBQ	494.	4.10	43.	11.	8.	.19
+	ROUTED TO	SA11MB	267.	4.33	41.	11.	8.	.19
+	HYDROGRAPH AT	A11NA	198.	4.07	16.	4.	3.	.08
+	ROUTED TO	SA11NA	32.	4.47	16.	4.	3.	.08
+	ROUTED TO	RA11NA	32.	4.70	16.	4.	3.	.08
+	3 COMBINED AT	CA11MB	308.	4.37	66.	17.	12.	.34
+	ROUTED TO	RA11MB	279.	4.60	66.	17.	12.	.34
+	HYDROGRAPH AT	A11O	116.	4.13	12.	3.	2.	.06
+	ROUTED TO	SA11O	35.	4.53	12.	3.	2.	.06
+	ROUTED TO	RA11O	35.	4.83	12.	3.	2.	.06

+	HYDROGRAPH AT	A11KB	227.	4.13	23.	6.	4.	.11
+	ROUTED TO	SA11KB	32.	4.67	21.	6.	4.	.11
+	HYDROGRAPH AT	A11KA	191.	4.07	19.	5.	3.	.08
+	ROUTED TO	SA11KA	31.	4.57	18.	5.	3.	.08
+	ROUTED TO	RA11KA	31.	4.80	18.	5.	3.	.08
+	3 COMBINED AT	CA11KB	98.	4.80	51.	14.	10.	.24
+	ROUTED TO	RA11KB	98.	5.03	51.	14.	10.	.24
+	HYDROGRAPH AT	A11G	90.	4.23	12.	3.	2.	.06
+	ROUTED TO	RA11GN	86.	4.43	12.	3.	2.	.06
+	HYDROGRAPH AT	A11KC	276.	4.13	26.	7.	5.	.13
+	ROUTED TO	SA11KC	82.	4.47	25.	7.	5.	.13
+	3 COMBINED AT	CA11KC	240.	4.50	87.	23.	17.	.44
+	ROUTED TO	RA11KC	237.	4.60	87.	23.	17.	.44
+	HYDROGRAPH AT	A11J	157.	4.37	25.	6.	5.	.11
+	ROUTED TO	SA11J	88.	4.77	25.	6.	5.	.11
+	3 COMBINED AT	CA11J	515.	4.67	170.	45.	33.	.89
+	HYDROGRAPH AT	A11L	382.	4.30	72.	18.	13.	.26
+	DIVERSION TO	DA11L	285.	4.10	15.	4.	3.	.26
+	HYDROGRAPH AT	DA11LQ	382.	4.30	57.	14.	10.	.26
+	ROUTED TO	RA11L	375.	4.50	57.	14.	10.	.26
+	HYDROGRAPH AT	A11I	298.	4.20	43.	11.	8.	.15

+	DIVERSION TO	DA11I	298.	4.20	24.	6.	4.	.15
+	HYDROGRAPH AT	DA11IQ	249.	4.37	19.	5.	3.	.15
+	3 COMBINED AT	CA11I	919.	4.63	241.	63.	45.	1.31
+	ROUTED TO	RA11I	898.	4.83	240.	63.	45.	1.31
+	HYDROGRAPH AT	A11EA	143.	4.40	24.	6.	4.	.14
+	ROUTED TO	RA11EA	141.	4.53	24.	6.	4.	.14
+	HYDROGRAPH AT	A11EB	126.	4.60	29.	7.	5.	.19
+	3 COMBINED AT	CA11EB	1040.	4.83	281.	73.	53.	1.64
+	HYDROGRAPH AT	41	126.	4.13	10.	3.	2.	.05
+	ROUTED TO	B41	96.	4.23	10.	3.	2.	.05
+	HYDROGRAPH AT	42	180.	4.13	17.	4.	3.	.08
+	ROUTED TO	B42	136.	4.23	17.	4.	3.	.08
+	2 COMBINED AT	C41	232.	4.23	27.	7.	5.	.13
+	ROUTED TO	RC41	212.	4.63	27.	7.	5.	.13
+	HYDROGRAPH AT	A11F	368.	4.40	54.	14.	10.	.33
+	2 COMBINED AT	CA11F	517.	4.53	81.	20.	15.	.46
+	2 COMBINED AT	CA11E	1279.	4.80	343.	89.	64.	2.11
+	ROUTED TO	RA11E	1270.	4.90	342.	89.	64.	2.11
+	HYDROGRAPH AT	A09U	324.	4.17	33.	8.	6.	.17
+	DIVERSION TO	A09UI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09U	324.	4.17	33.	8.	6.	.17
	ROUTED TO							

+		RA09UW	238.	4.67	33.	8.	6.	.17
+	HYDROGRAPH AT	A09T	210.	4.33	27.	7.	5.	.18
+	2 COMBINED AT	CA09T	383.	4.43	60.	15.	11.	.36
+	DIVERSION TO	A09TI	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	DA09T	383.	4.43	60.	15.	11.	.36
+	ROUTED TO	RA09TW	360.	4.70	60.	15.	11.	.36
+	HYDROGRAPH AT	A11A	452.	4.33	69.	17.	13.	.30
+	DIVERSION TO	DA11A	315.	4.10	16.	4.	3.	.30
+	HYDROGRAPH AT	DA11AQ	452.	4.33	54.	14.	10.	.30
+	3 COMBINED AT	CX23	1591.	4.83	430.	112.	81.	2.76
+	ROUTED TO	RX23	1562.	5.03	429.	112.	81.	2.76
+	HYDROGRAPH AT	S1	124.	4.40	21.	5.	4.	.12
+	HYDROGRAPH AT	P2	111.	4.10	11.	3.	2.	.05
+	DIVERSION TO	RB2	111.	4.10	10.	2.	2.	.05
+	HYDROGRAPH AT	RT2	18.	4.57	1.	0.	0.	.05
+	3 COMBINED AT	CS1	1585.	5.03	441.	115.	83.	2.93
+	ROUTED TO	RS1	1584.	5.03	441.	115.	83.	2.93
+	HYDROGRAPH AT	S2	31.	4.07	2.	0.	0.	.01
+	HYDROGRAPH AT	S3	18.	4.03	1.	0.	0.	.01
+	3 COMBINED AT	CS2	1583.	5.03	442.	116.	83.	2.95
+	ROUTED TO	RS2	1583.	5.07	442.	116.	83.	2.95
+	HYDROGRAPH AT	P3	85.	4.17	11.	3.	2.	.05

+	DIVERSION TO	RB3	85.	4.17	11.	3.	2.	.05
+	HYDROGRAPH AT	RT3	9.	5.17	1.	0.	0.	.05
+	2 COMBINED AT	CP3	1583.	5.07	442.	116.	83.	3.01
+	HYDROGRAPH AT	P4b	45.	4.07	4.	1.	1.	.02
+	DIVERSION TO	RB4b	12.	3.80	1.	0.	0.	.02
+	HYDROGRAPH AT	RT4b	45.	4.07	3.	1.	1.	.02
+	HYDROGRAPH AT	S4	16.	4.23	2.	1.	0.	.01
+	HYDROGRAPH AT	P1	42.	4.20	5.	1.	1.	.03
+	DIVERSION TO	DB1	33.	4.07	1.	0.	0.	.03
+	HYDROGRAPH AT	DT1	42.	4.20	4.	1.	1.	.03
+	2 COMBINED AT	CP1	57.	4.20	6.	2.	1.	.04
+	HYDROGRAPH AT	HV2	7.	5.20	5.	1.	1.	.03
+	ROUTED TO	RHV2	7.	5.27	5.	1.	1.	.03
+	DIVERSION TO	DBHV2	7.	5.27	1.	0.	0.	.03
+	HYDROGRAPH AT	DTHV2	7.	5.50	4.	1.	1.	.03
+	HYDROGRAPH AT	P4a	51.	4.20	8.	2.	1.	.04
+	DIVERSION TO	DB4a	30.	4.00	1.	0.	0.	.04
+	HYDROGRAPH AT	DT4a	51.	4.20	6.	2.	1.	.04
+	5 COMBINED AT	SOUTH	1588.	5.07	454.	119.	86.	3.14
+	HYDROGRAPH AT	N11O	78.	4.30	8.	2.	1.	.05
+	DIVERSION TO	N11OI	70.	4.30	7.	2.	1.	.05

+	HYDROGRAPH AT	DN11O	8.	4.30	1.	0.	0.	.05
+	ROUTED TO	RN11OW	5.	5.20	1.	0.	0.	.05
+	HYDROGRAPH AT	DRA09T	0.	.00	0.	0.	0.	.36
+	ROUTED TO	RA09TS	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	A09R	104.	4.57	20.	5.	4.	.14
+	3 COMBINED AT	CA09R	104.	4.57	21.	5.	4.	.20
+	DIVERSION TO	A09RI	104.	4.57	21.	5.	4.	.20
+	HYDROGRAPH AT	DA09R	1.	5.20	0.	0.	0.	.20
+	ROUTED TO	RA09RW	1.	7.07	0.	0.	0.	.20
+	HYDROGRAPH AT	A09S	116.	4.20	21.	5.	4.	.07
+	DIVERSION TO	DA09S	116.	4.20	14.	4.	3.	.07
+	HYDROGRAPH AT	DA09SQ	69.	4.60	7.	2.	1.	.07
+	2 COMBINED AT	CA09S	69.	4.60	7.	2.	1.	.27
+	ROUTED TO	RA09SW	61.	4.77	7.	2.	1.	.27
+	HYDROGRAPH AT	A09QA	112.	4.30	13.	3.	2.	.09
+	2 COMBINED AT	CA09QA	111.	4.30	20.	5.	4.	.36
+	DIVERSION TO	A09QAI	111.	4.30	19.	5.	4.	.36
+	HYDROGRAPH AT	DA09QA	1.	5.97	0.	0.	0.	.36
+	ROUTED TO	RA09QW	1.	6.10	0.	0.	0.	.36
+	HYDROGRAPH AT	A99YA	157.	4.23	16.	4.	3.	.10
+	2 COMBINED AT	CA99YA	157.	4.23	17.	4.	3.	.46
	ROUTED TO							

+		RA99YA	152.	4.30	17.	4.	3.	.46
+	HYDROGRAPH AT	A99YB	205.	4.30	23.	6.	4.	.17
+	3 COMBINED AT	CA99YB	1585.	5.07	473.	124.	89.	3.77
+	3 COMBINED AT	AFR1	1744.	5.03	558.	146.	105.	4.56
+	HYDROGRAPH AT	BA09UI	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09US	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	N11NB	159.	4.37	24.	6.	4.	.14
+	2 COMBINED AT	CN11NB	159.	4.37	24.	6.	4.	.14
+	ROUTED TO	RN11NW	148.	4.77	24.	6.	4.	.14
+	HYDROGRAPH AT	BN11OI	70.	4.30	7.	2.	1.	.05
+	ROUTED TO	RN11OS	57.	4.73	7.	2.	1.	.05
+	HYDROGRAPH AT	N11M	137.	4.27	14.	3.	2.	.10
+	3 COMBINED AT	CN11M	235.	4.73	45.	11.	8.	.24
+	DIVERSION TO	N11MI	59.	4.73	11.	3.	2.	.24
+	HYDROGRAPH AT	DN11M	176.	4.73	34.	8.	6.	.24
+	ROUTED TO	RN11MS	164.	4.97	34.	8.	6.	.24
+	HYDROGRAPH AT	N11J	214.	4.37	41.	10.	7.	.24
+	DIVERSION TO	LN11JD	80.	4.03	4.	1.	1.	.24
+	HYDROGRAPH AT	LN11J	214.	4.37	38.	9.	7.	.24
+	2 COMBINED AT	CN11J	299.	4.50	71.	18.	13.	.48
+	DIVERSION TO	N11JI	299.	4.50	71.	18.	13.	.48
+	HYDROGRAPH AT	DN11J	0.	.00	0.	0.	0.	.48

+	ROUTED TO	RN11JW	0.	.00	0.	0.	0.	.48
+	HYDROGRAPH AT	DRN11M	59.	4.73	11.	3.	2.	.24
+	ROUTED TO	RN11MW	52.	5.27	11.	3.	2.	.24
+	2 COMBINED AT	CX4	52.	5.27	11.	3.	2.	.48
+	ROUTED TO	RX4	50.	5.50	11.	3.	2.	.48
+	HYDROGRAPH AT	A09O	119.	4.70	31.	8.	6.	.19
+	ROUTED TO	SA09O	45.	5.73	28.	8.	6.	.19
+	HYDROGRAPH AT	BA09RI	104.	4.57	21.	5.	4.	.20
+	ROUTED TO	RA09RS	100.	4.90	21.	5.	4.	.20
+	3 COMBINED AT	CA09O	152.	5.30	57.	15.	11.	.68
+	DIVERSION TO	A09OI	152.	5.30	57.	15.	11.	.68
+	HYDROGRAPH AT	DA09O	0.	.00	0.	0.	0.	.68
+	ROUTED TO	RA09OW	0.	.00	0.	0.	0.	.68
+	HYDROGRAPH AT	A09P	184.	4.47	31.	8.	6.	.19
+	ROUTED TO	SA09P	54.	5.23	30.	8.	6.	.19
+	2 COMBINED AT	CA09P	52.	5.23	28.	7.	5.	.87
+	ROUTED TO	RA09P	52.	5.27	28.	7.	5.	.87
+	HYDROGRAPH AT	BA09QA	111.	4.30	19.	5.	4.	.36
+	ROUTED TO	RA09QB	104.	4.53	19.	5.	4.	.36
+	HYDROGRAPH AT	A09QB	163.	4.27	23.	6.	4.	.14
+	3 COMBINED AT	CA09Q	234.	4.50	66.	17.	12.	1.01

+	DIVERSION TO	A09QI	234.	4.50	66.	17.	12.	1.01
+	HYDROGRAPH AT	DA09Q	0.	.00	0.	0.	0.	1.01
+	ROUTED TO	RA09QW	0.	.00	0.	0.	0.	1.01
+	HYDROGRAPH AT	A10A	266.	4.30	32.	8.	6.	.19
+	2 COMBINED AT	CA10A	219.	4.30	29.	7.	5.	1.20
+	ROUTED TO	RA10A	217.	4.37	29.	7.	5.	1.20
+	HYDROGRAPH AT	A99X	507.	4.20	57.	14.	10.	.26
+	2 COMBINED AT	CA99X	562.	4.23	82.	21.	15.	1.46
+	2 COMBINED AT	AFR2	1760.	5.03	604.	159.	115.	6.02
+	HYDROGRAPH AT	BA09OI	152.	5.30	57.	15.	11.	.68
+	ROUTED TO	RA09OS	150.	5.57	57.	15.	11.	.68
+	HYDROGRAPH AT	A09K	382.	4.57	60.	15.	11.	.41
+	DIVERSION TO	A09KI	279.	4.57	44.	11.	8.	.41
+	HYDROGRAPH AT	DA09K	103.	4.57	16.	4.	3.	.41
+	2 COMBINED AT	CX7	183.	5.40	75.	20.	14.	.41
+	ROUTED TO	RX7S	183.	5.53	74.	20.	14.	.41
+	HYDROGRAPH AT	N11NA	60.	4.07	4.	1.	1.	.02
+	ROUTED TO	RN11NA	46.	4.43	4.	1.	1.	.02
+	HYDROGRAPH AT	N11NC	250.	4.23	27.	7.	5.	.17
+	2 COMBINED AT	CN11NC	265.	4.27	31.	8.	6.	.19
+	DIVERSION TO	N11NP	149.	4.03	24.	6.	4.	.19
	HYDROGRAPH AT							

+		DN11NC	116.	4.27	7.	2.	1.	.19
+	ROUTED TO	RN11NC	111.	4.37	7.	2.	1.	.19
+	HYDROGRAPH AT	N11ND	62.	4.23	10.	2.	2.	.05
+	HYDROGRAPH AT	N11K	152.	4.33	28.	7.	5.	.17
+	3 COMBINED AT	CN11K	318.	4.37	44.	11.	8.	.41
+	DIVERSION TO	N11KP	55.	3.97	19.	5.	4.	.41
+	HYDROGRAPH AT	DN11KS	263.	4.37	24.	6.	4.	.41
+	ROUTED TO	RN11K	246.	4.63	24.	6.	4.	.41
+	DIVERSION TO	X5I	122.	4.63	7.	2.	1.	.41
+	HYDROGRAPH AT	DX5	124.	4.63	17.	4.	3.	.41
+	ROUTED TO	RX5W	118.	4.93	17.	4.	3.	.41
+	HYDROGRAPH AT	N11H	410.	4.57	61.	15.	11.	.42
+	2 COMBINED AT	CN11H	364.	4.57	72.	18.	13.	.83
+	ROUTED TO	RN11H	351.	4.80	72.	18.	13.	.83
+	HYDROGRAPH AT	BN11JI	299.	4.50	71.	18.	13.	.48
+	ROUTED TO	RN11JS	289.	4.93	71.	18.	13.	.48
+	HYDROGRAPH AT	N11G	526.	4.57	73.	18.	13.	.52
+	3 COMBINED AT	CN11G	855.	4.80	191.	48.	34.	1.36
+	ROUTED TO	RN11G	844.	4.90	191.	48.	34.	1.36
+	HYDROGRAPH AT	N11DA	295.	4.30	54.	14.	10.	.26
+	DIVERSION TO	LDAOUT	277.	4.23	16.	4.	3.	.26
+	HYDROGRAPH AT	LN11DA	295.	4.30	38.	10.	7.	.26

+	ROUTED TO	SN11DA	121.	5.00	38.	10.	7.	.26
+	DIVERSION TO	D11DAS	21.	5.00	8.	2.	1.	.26
+	HYDROGRAPH AT	N11DAW	100.	5.00	30.	8.	5.	.26
+	ROUTED TO	RN11DA	100.	5.20	30.	8.	5.	.26
+	HYDROGRAPH AT	N11FB	114.	4.33	25.	6.	5.	.12
+	DIVERSION TO	LN1FBD	114.	4.33	21.	5.	4.	.12
+	HYDROGRAPH AT	LN11FB	29.	5.57	4.	1.	1.	.12
+	2 COMBINED AT	CN11FB	124.	5.57	34.	8.	6.	.38
+	2 COMBINED AT	C98RGL	881.	4.93	210.	53.	38.	1.73
+	ROUTED TO	RN11FB	875.	4.97	210.	53.	38.	1.73
+	HYDROGRAPH AT	DRA09K	279.	4.57	44.	11.	8.	.41
+	ROUTED TO	RA09KS	271.	4.73	44.	11.	8.	.41
+	HYDROGRAPH AT	N11FA	194.	4.30	38.	10.	7.	.18
+	DIVERSION TO	LN1FAD	194.	4.30	16.	4.	3.	.18
+	HYDROGRAPH AT	LN11FA	185.	4.43	23.	6.	4.	.18
+	HYDROGRAPH AT	A09GA	200.	4.07	22.	6.	4.	.07
+	DIVERSION TO	L09GAD	198.	4.07	12.	3.	2.	.07
+	HYDROGRAPH AT	LA09GA	193.	4.10	10.	3.	2.	.07
+	4 COMBINED AT	CN11FA	1124.	4.93	269.	67.	49.	1.99
+	ROUTED TO	RN11FA	1120.	4.97	269.	67.	49.	1.99
+	HYDROGRAPH AT	A09GB	27.	4.67	10.	3.	2.	.05

+	DIVERSION TO	L09GBD	27.	4.67	6.	1.	1.	.05
+	HYDROGRAPH AT	LA09GB	20.	5.40	5.	1.	1.	.05
+	2 COMBINED AT	CA09G	1116.	4.97	272.	68.	49.	2.04
+	DIVERSION TO	A09GI	150.	4.73	48.	12.	9.	2.04
+	HYDROGRAPH AT	DA09G	964.	4.97	224.	56.	40.	2.04
+	ROUTED TO	RA09GW	956.	5.03	224.	56.	40.	2.04
+	2 COMBINED AT	CX8	990.	5.07	274.	70.	50.	2.45
+	ROUTED TO	RX8W	981.	5.17	273.	70.	50.	2.45
+	HYDROGRAPH AT	A09H	199.	4.43	50.	13.	9.	.24
+	DIVERSION TO	LA09HD	199.	4.43	25.	6.	5.	.24
+	HYDROGRAPH AT	LA09H	166.	4.80	25.	6.	5.	.24
+	2 COMBINED AT	CA09H1	1058.	5.17	287.	73.	53.	2.69
+	HYDROGRAPH AT	A09J	166.	4.33	34.	9.	6.	.17
+	DIVERSION TO	LA09JD	166.	4.33	16.	4.	3.	.17
+	HYDROGRAPH AT	LA09J	151.	4.53	19.	5.	3.	.17
+	DIVERSION TO	A09JI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09J	151.	4.53	19.	5.	3.	.17
+	ROUTED TO	RA09JS	130.	4.87	19.	5.	3.	.17
+	2 COMBINED AT	CA09H	1122.	5.13	298.	76.	55.	2.85
+	ROUTED TO	RA09H	1120.	5.17	298.	76.	55.	2.85
+	HYDROGRAPH AT	BA09QI	234.	4.50	66.	17.	12.	1.01
	ROUTED TO							

+		RA09QS	230.	4.63	66.	17.	12.	1.01
+	HYDROGRAPH AT	A09M	251.	4.47	47.	12.	9.	.25
+	DIVERSION TO	LA09MD	230.	4.33	14.	3.	3.	.25
+	HYDROGRAPH AT	LA09M	251.	4.47	34.	8.	6.	.25
+	2 COMBINED AT	CA09M	500.	4.57	106.	27.	19.	.25
+	ROUTED TO	RA09M	497.	4.60	106.	27.	19.	.25
+	HYDROGRAPH AT	A09N	138.	4.27	24.	6.	4.	.11
+	2 COMBINED AT	CA09N	598.	4.57	128.	33.	24.	.36
+	ROUTED TO	LA09N	415.	4.93	123.	33.	24.	.36
+	ROUTED TO	RA09N	414.	5.03	123.	33.	24.	.36
+	HYDROGRAPH AT	DRA09J	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09JW	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	A09L	142.	4.33	29.	7.	5.	.14
+	3 COMBINED AT	CA09L	480.	5.03	149.	40.	29.	.50
+	ROUTED TO	LA09L	478.	5.07	148.	40.	29.	.50
+	ROUTED TO	RA09LS	475.	5.10	148.	40.	29.	.50
+	HYDROGRAPH AT	A09IH	103.	4.27	19.	5.	3.	.09
+	2 COMBINED AT	CA09IH	490.	5.10	162.	44.	32.	.59
+	ROUTED TO	LA09IH	468.	5.20	159.	44.	32.	.59
+	HYDROGRAPH AT	A09I	134.	4.37	30.	8.	5.	.13
+	DIVERSION TO	LA09ID	134.	4.37	11.	3.	2.	.13
+	HYDROGRAPH AT	LA09I	131.	4.47	19.	5.	3.	.13

+	3 COMBINED AT	CX10	1301.	5.23	429.	113.	81.	3.57
+	ROUTED TO	RX10	1292.	5.37	428.	113.	81.	3.57
+	HYDROGRAPH AT	A99V	276.	4.40	35.	9.	6.	.21
+	2 COMBINED AT	CA99V	1307.	5.37	445.	119.	86.	3.77
+	HYDROGRAPH AT	A10	347.	4.23	33.	8.	6.	.21
+	HYDROGRAPH AT	A99W	237.	4.57	46.	12.	8.	.22
+	DIVERSION TO	LA99WD	211.	4.37	14.	3.	2.	.22
+	HYDROGRAPH AT	LA99W	237.	4.57	33.	8.	6.	.22
+	4 COMBINED AT	AFR3	2411.	5.23	972.	259.	187.	10.22
+	HYDROGRAPH AT	DRA09G	150.	4.73	48.	12.	9.	2.04
+	ROUTED TO	RA09GS	150.	5.60	48.	12.	9.	2.04
+	HYDROGRAPH AT	A09F	426.	4.53	84.	21.	15.	.37
+	DIVERSION TO	LA09FD	392.	4.37	27.	7.	5.	.37
+	HYDROGRAPH AT	LA09F	426.	4.53	57.	14.	10.	.37
+	2 COMBINED AT	CA09F	426.	4.53	109.	27.	20.	.37
+	DIVERSION TO	A09FI	65.	4.53	12.	3.	2.	.37
+	HYDROGRAPH AT	DA09F	360.	4.53	97.	24.	18.	.37
+	ROUTED TO	RA09FW	363.	4.63	97.	24.	18.	.37
+	HYDROGRAPH AT	A09E	148.	4.33	33.	8.	6.	.15
+	DIVERSION TO	LA09ED	148.	4.33	17.	4.	3.	.15
+	HYDROGRAPH AT	LA09E	123.	4.67	17.	4.	3.	.15

+	2 COMBINED AT	CA09E	478.	4.67	113.	29.	21.	.51
+	ROUTED TO	RA09E	443.	4.83	113.	29.	21.	.51
+	HYDROGRAPH AT	A09D	577.	4.13	62.	15.	11.	.25
+	DIVERSION TO	LA09DD	577.	4.13	31.	8.	6.	.25
+	HYDROGRAPH AT	LA09D	553.	4.20	31.	8.	6.	.25
+	2 COMBINED AT	CA09C*	458.	4.23	139.	35.	25.	.77
+	ROUTED TO	RA09C*	452.	4.87	139.	35.	25.	.77
+	HYDROGRAPH AT	A09C	78.	4.40	11.	3.	2.	.07
+	2 COMBINED AT	CA09C	480.	4.27	148.	38.	27.	.84
+	ROUTED TO	RA09C	469.	4.97	148.	38.	27.	.84
+	HYDROGRAPH AT	A09B	115.	4.07	12.	3.	2.	.04
+	ROUTED TO	RA09B	91.	4.50	11.	3.	2.	.04
+	HYDROGRAPH AT	A09A	72.	4.57	18.	4.	3.	.08
+	3 COMBINED AT	CA09A	556.	4.40	172.	44.	32.	.96
+	DIVERSION TO	A09AI	416.	4.40	86.	21.	15.	.96
+	HYDROGRAPH AT	DA09AO	140.	4.40	87.	23.	16.	.96
+	ROUTED TO	RA09AW	140.	6.20	85.	23.	16.	.96
+	HYDROGRAPH AT	A99T	83.	4.03	6.	1.	1.	.03
+	DIVERSION TO	LA99TD	16.	3.73	1.	0.	0.	.03
+	HYDROGRAPH AT	LA99T	83.	4.03	5.	1.	1.	.03
+	ROUTED TO	RA99T	70.	4.17	5.	1.	1.	.03
	HYDROGRAPH AT							

+		A09	249.	4.30	30.	8.	5.	.18
+	3 COMBINED AT	CA09	241.	4.27	109.	30.	22.	1.17
+	HYDROGRAPH AT	A99U	82.	4.30	13.	3.	2.	.07
+	3 COMBINED AT	AFR4	2396.	5.27	1057.	284.	204.	11.46
+	HYDROGRAPH AT	A99S	47.	4.63	10.	2.	2.	.08
+	HYDROGRAPH AT	A08A	70.	4.80	22.	6.	4.	.14
+	ROUTED TO	RA08A	69.	4.97	22.	6.	4.	.14
+	HYDROGRAPH AT	A99R	57.	4.20	6.	1.	1.	.04
+	ROUTED TO	RA99R	51.	4.47	6.	1.	1.	.04
+	HYDROGRAPH AT	A08	185.	4.07	11.	3.	2.	.08
+	4 COMBINED AT	CA08	195.	4.07	47.	12.	9.	.33
+	2 COMBINED AT	AFR5	2429.	5.27	1076.	289.	208.	11.79
+	HYDROGRAPH AT	A07G	400.	4.27	66.	17.	12.	.26
+	DIVERSION TO	LA07GD	400.	4.23	26.	7.	5.	.26
+	HYDROGRAPH AT	LA07G	395.	4.30	40.	10.	7.	.26
+	ROUTED TO	RA07G	352.	4.53	40.	10.	7.	.26
+	HYDROGRAPH AT	A07F	179.	4.70	48.	12.	9.	.23
+	ROUTED TO	RA07F	178.	4.80	48.	12.	9.	.23
+	HYDROGRAPH AT	A07E	413.	4.20	63.	16.	11.	.23
+	3 COMBINED AT	CA07E	726.	4.53	147.	37.	27.	.72
+	ROUTED TO	RA07E	716.	4.60	147.	37.	27.	.72
+	HYDROGRAPH AT	A07C	187.	4.43	29.	7.	5.	.17

+	2 COMBINED AT	CA07C	841.	4.60	173.	44.	32.	.89
+	ROUTED TO	RA07C	833.	4.63	173.	44.	32.	.89
+	HYDROGRAPH AT	A07H	217.	4.13	23.	6.	4.	.09
+	ROUTED TO	RA07H	202.	4.27	23.	6.	4.	.09
+	HYDROGRAPH AT	DA09AI	416.	4.40	86.	21.	15.	.96
+	ROUTED TO	RA09AI	378.	5.17	86.	21.	15.	.96
+	HYDROGRAPH AT	A08B	122.	4.37	20.	5.	4.	.10
+	2 COMBINED AT	CA08B	560.	4.60	115.	29.	21.	.10
+	ROUTED TO	RA08B	480.	4.90	115.	29.	21.	.10
+	HYDROGRAPH AT	A07D	117.	5.03	39.	10.	7.	.23
+	4 COMBINED AT	CA07D	1030.	4.87	323.	82.	59.	1.31
+	ROUTED TO	RA07D	1021.	5.03	322.	82.	59.	1.31
+	HYDROGRAPH AT	S30D	209.	4.23	32.	8.	6.	.13
+	ROUTED TO	RS30D	198.	4.53	32.	8.	6.	.13
+	HYDROGRAPH AT	S30C	496.	4.40	116.	29.	21.	.45
+	HYDROGRAPH AT	DA09FI	65.	4.53	12.	3.	2.	.37
+	ROUTED TO	RA09FI	49.	5.13	12.	3.	2.	.37
+	3 COMBINED AT	XX1	671.	4.50	158.	40.	29.	.58
+	HYDROGRAPH AT	S30B	311.	4.73	86.	22.	16.	.40
+	2 COMBINED AT	CS30B	892.	4.57	237.	60.	43.	.98
+	DIVERSION TO	DS30BI	342.	4.57	36.	9.	7.	.98

+	HYDROGRAPH AT	DS30BO	550.	4.47	200.	51.	37.	.98
+	ROUTED TO	RS30BW	550.	4.90	200.	51.	37.	.98
+	HYDROGRAPH AT	S30A	524.	4.43	120.	30.	22.	.53
+	2 COMBINED AT	CS30A	995.	4.60	313.	80.	58.	1.51
+	DIVERSION TO	DS30AI	445.	4.60	68.	17.	12.	1.51
+	HYDROGRAPH AT	DS30AO	550.	4.37	245.	63.	45.	1.51
+	ROUTED TO	RS30AW	550.	4.67	245.	63.	45.	1.51
+	HYDROGRAPH AT	S30	418.	4.23	65.	16.	12.	.32
+	2 COMBINED AT	CS30	839.	4.40	302.	78.	56.	1.84
+	ROUTED TO	RS30	838.	4.43	302.	78.	56.	1.84
+	HYDROGRAPH AT	A07B	936.	4.20	123.	31.	22.	.65
+	DIVERSION TO	LA07BD	877.	4.13	39.	10.	7.	.65
+	HYDROGRAPH AT	LA07B	923.	4.23	85.	21.	15.	.65
+	3 COMBINED AT	CA07B	1877.	4.47	648.	166.	120.	3.80

1

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

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
FOR STORM = 1 STORM AREA (SQ MI) = .01									
	RCBA MANE	2.00	16.20	252.00	1.88	2.00	16.20	252.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7029E+00 EXCESS= .0000E+00 OUTFLOW= .7028E+00 BASIN STORAGE= .6822E-03 PERCENT ERROR= -.1

FOR STORM = 2 STORM AREA (SQ MI) = .50								
	RCBA MANE	2.00	16.06	252.00	1.87	2.00	16.06	252.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6964E+00 EXCESS= .0000E+00 OUTFLOW= .6964E+00 BASIN STORAGE= .6790E-03 PERCENT ERROR= -.1

FOR STORM = 3 STORM AREA (SQ MI) = 2.80								
	RCBA MANE	2.00	9.23	252.00	1.65	2.00	9.23	252.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6177E+00 EXCESS= .0000E+00 OUTFLOW= .6177E+00 BASIN STORAGE= .6721E-03 PERCENT ERROR= -.1

FOR STORM = 4 STORM AREA (SQ MI) = 16.00								
	RCBA MANE	2.00	6.93	254.00	1.38	2.00	6.93	254.00	1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5170E+00 EXCESS= .0000E+00 OUTFLOW= .5169E+00 BASIN STORAGE= .6849E-03 PERCENT ERROR= -.1

FOR STORM = 5 STORM AREA (SQ MI) = 90.00								
	RCBA MANE	2.00	4.43	254.00	.98	2.00	4.43	254.00	.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3666E+00 EXCESS= .0000E+00 OUTFLOW= .3665E+00 BASIN STORAGE= .7026E-03 PERCENT ERROR= -.2

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FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RCBB  MANE         2.00     40.33    246.00      1.67      2.00     40.33    246.00        1.67


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1511E+01 EXCESS= .0000E+00 OUTFLOW= .1511E+01 BASIN STORAGE= .4107E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RCBB  MANE         2.00     39.98    246.00      1.65      2.00     39.98    246.00        1.65


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+01 EXCESS= .0000E+00 OUTFLOW= .1496E+01 BASIN STORAGE= .4087E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBB  MANE         2.00     20.79    248.00      1.37      2.00     20.79    248.00        1.37


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1240E+01 EXCESS= .0000E+00 OUTFLOW= .1240E+01 BASIN STORAGE= .4385E-03 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RCBB  MANE         2.00     14.74    248.00      1.08      2.00     14.74    248.00        1.08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9835E+00 EXCESS= .0000E+00 OUTFLOW= .9836E+00 BASIN STORAGE= .4458E-03 PERCENT ERROR=
-.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBB  MANE         2.00      8.21    248.00       .70      2.00      8.21    248.00         .70
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .6322E+00 EXCESS= .0000E+00 OUTFLOW= .6323E+00 BASIN STORAGE= .4268E-03 PERCENT ERROR=
-.1


FOR STORM = 1  STORM AREA (SQ MI) =        .01
    R28a  MANE         2.00     93.47    258.00      1.69      2.00     93.47    258.00        1.69


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4661E+01 EXCESS= .0000E+00 OUTFLOW= .4606E+01 BASIN STORAGE= .2152E-02 PERCENT ERROR=
1.1


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    R28a  MANE         2.00     92.51    258.00      1.68      2.00     92.51    258.00        1.68


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4611E+01 EXCESS= .0000E+00 OUTFLOW= .4556E+01 BASIN STORAGE= .2141E-02 PERCENT ERROR=
1.1


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    R28a  MANE         2.00     61.51    262.00      1.52      2.00     61.51    262.00        1.52


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4171E+01 EXCESS= .0000E+00 OUTFLOW= .4140E+01 BASIN STORAGE= .2113E-02 PERCENT ERROR=
.7


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    R28a  MANE         2.00     46.45    264.00      1.28      2.00     46.45    264.00        1.28


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3518E+01 EXCESS= .0000E+00 OUTFLOW= .3492E+01 BASIN STORAGE= .2118E-02 PERCENT ERROR=
.7
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FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    R28a  MANE         2.00     30.11    270.00       .90      2.00     30.11    270.00         .90


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2479E+01 EXCESS= .0000E+00 OUTFLOW= .2462E+01 BASIN STORAGE= .2175E-02 PERCENT ERROR=
.6


FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RCBL  MANE         2.00    261.85    258.00      1.87      2.00    261.85    258.00        1.87


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1649E+02 EXCESS= .0000E+00 OUTFLOW= .1650E+02 BASIN STORAGE= .7427E-04 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RCBL  MANE         2.00    259.55    258.00      1.86      2.00    259.55    258.00        1.86


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1633E+02 EXCESS= .0000E+00 OUTFLOW= .1634E+02 BASIN STORAGE= .7378E-04 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBL  MANE         2.00    186.09    260.00      1.70      2.00    186.09    260.00        1.70


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+02 EXCESS= .0000E+00 OUTFLOW= .1495E+02 BASIN STORAGE= .7962E-04 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RCBL  MANE         2.00    141.36    262.00      1.45      2.00    141.36    262.00        1.45
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1280E+02 EXCESS= .0000E+00 OUTFLOW= .1280E+02 BASIN STORAGE= .7387E-04 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBL  MANE         2.00     91.72    270.00      1.06      2.00     91.72    270.00        1.06


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9365E+01 EXCESS= .0000E+00 OUTFLOW= .9364E+01 BASIN STORAGE= .7616E-04 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RCBK  MANE         1.21    345.61    254.80      1.79      2.00    344.17    254.00        1.79


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2075E+02 EXCESS= .0000E+00 OUTFLOW= .2075E+02 BASIN STORAGE= .3977E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RCBK  MANE         1.21    341.62    255.52      1.77      2.00    340.43    256.00        1.77


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2053E+02 EXCESS= .0000E+00 OUTFLOW= .2053E+02 BASIN STORAGE= .3927E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBK  MANE         1.35    231.84    261.32      1.58      2.00    230.58    262.00        1.58


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1832E+02 EXCESS= .0000E+00 OUTFLOW= .1832E+02 BASIN STORAGE= .3845E-03 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
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     RCBK  MANE        1.47    172.48    263.68      1.33      2.00    172.08    264.00        1.33


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1534E+02 EXCESS= .0000E+00 OUTFLOW= .1534E+02 BASIN STORAGE= .3787E-03 PERCENT ERROR=
.0


   FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RCBK  MANE        1.69    105.90    269.24       .93      2.00    105.53    268.00         .93


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1082E+02 EXCESS= .0000E+00 OUTFLOW= .1082E+02 BASIN STORAGE= .3902E-03 PERCENT ERROR=
.0


   FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R15  MANE        1.59    364.60    255.19      1.68      2.00    364.40    256.00        1.68


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2207E+02 EXCESS= .0000E+00 OUTFLOW= .2207E+02 BASIN STORAGE= .5519E-03 PERCENT ERROR=
.0


   FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R15  MANE        1.59    361.32    256.10      1.66      2.00    361.17    256.00        1.66


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2182E+02 EXCESS= .0000E+00 OUTFLOW= .2182E+02 BASIN STORAGE= .5449E-03 PERCENT ERROR=
.0


   FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R15  MANE        1.78    242.06    262.19      1.47      2.00    242.04    262.00        1.47


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1925E+02 EXCESS= .0000E+00 OUTFLOW= .1925E+02 BASIN STORAGE= .5437E-03 PERCENT ERROR=
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```
.0


   FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R15  MANE        1.94    178.96    264.24      1.22      2.00    178.70    264.00        1.22


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1604E+02 EXCESS= .0000E+00 OUTFLOW= .1604E+02 BASIN STORAGE= .5145E-03 PERCENT ERROR=
.0


   FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R15  MANE        2.00    108.84    270.00       .86      2.00    108.84    270.00         .86


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1122E+02 EXCESS= .0000E+00 OUTFLOW= .1122E+02 BASIN STORAGE= .5202E-03 PERCENT ERROR=
.0


   FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE1  MANE        2.00     31.63    248.00      1.33      2.00     31.63    248.00        1.33


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9906E+00 EXCESS= .0000E+00 OUTFLOW= .9916E+00 BASIN STORAGE= .9785E-03 PERCENT ERROR=
-.2


   FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE1  MANE        2.00     31.33    248.00      1.31      2.00     31.33    248.00        1.31


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9789E+00 EXCESS= .0000E+00 OUTFLOW= .9800E+00 BASIN STORAGE= .9741E-03 PERCENT ERROR=
-.2


   FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE1  MANE        2.00     14.94    250.00       .98      2.00     14.94    250.00         .98
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 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7298E+00 EXCESS= .0000E+00 OUTFLOW= .7305E+00 BASIN STORAGE= .9297E-03 PERCENT ERROR=
-.2

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE1  MANE         2.00      9.90    250.00       .66      2.00      9.90    250.00         .66

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4921E+00 EXCESS= .0000E+00 OUTFLOW= .4924E+00 BASIN STORAGE= .9535E-03 PERCENT ERROR=
-.3

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE1  MANE         2.00      4.48    252.00       .29      2.00      4.48    252.00         .29

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2165E+00 EXCESS= .0000E+00 OUTFLOW= .2165E+00 BASIN STORAGE= .9318E-03 PERCENT ERROR=
-.4

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               RE2  MANE         2.00     28.17    248.00      1.48      2.00     28.17    248.00        1.48

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1266E+01 EXCESS= .0000E+00 OUTFLOW= .1266E+01 BASIN STORAGE= .4434E-03 PERCENT ERROR=
-.1

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               RE2  MANE         2.00     27.90    248.00      1.47      2.00     27.90    248.00        1.47

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1251E+01 EXCESS= .0000E+00 OUTFLOW= .1252E+01 BASIN STORAGE= .4414E-03 PERCENT ERROR=
-.1
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          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               RE2  MANE         2.00     15.28    250.00      1.14      2.00     15.28    250.00        1.14

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .9756E+00 EXCESS= .0000E+00 OUTFLOW= .9758E+00 BASIN STORAGE= .4537E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE2  MANE         2.00     10.53    250.00       .83      2.00     10.53    250.00         .83

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7092E+00 EXCESS= .0000E+00 OUTFLOW= .7093E+00 BASIN STORAGE= .4172E-03 PERCENT ERROR=
-.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE2  MANE         2.00      5.33    252.00       .45      2.00      5.33    252.00         .45

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3842E+00 EXCESS= .0000E+00 OUTFLOW= .3842E+00 BASIN STORAGE= .4384E-03 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R13  MANE         2.00    178.99    250.00      1.45      2.00    178.99    250.00        1.45

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .6914E+01 EXCESS= .0000E+00 OUTFLOW= .6896E+01 BASIN STORAGE= .1287E-02 PERCENT ERROR=
 .2

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R13  MANE         2.00    177.35    250.00      1.44      2.00    177.35    250.00        1.44
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .6837E+01 EXCESS= .0000E+00 OUTFLOW= .6822E+01 BASIN STORAGE= .1281E-02 PERCENT ERROR=
.2


          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R13  MANE         2.00     96.23    252.00      1.15      2.00     96.23    252.00        1.15


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5447E+01 EXCESS= .0000E+00 OUTFLOW= .5438E+01 BASIN STORAGE= .1461E-02 PERCENT ERROR=
.1


          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R13  MANE         2.00     66.74    252.00       .85      2.00     66.74    252.00         .85


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4042E+01 EXCESS= .0000E+00 OUTFLOW= .4035E+01 BASIN STORAGE= .1282E-02 PERCENT ERROR=
.1


          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R13  MANE         2.00     35.14    256.00       .48      2.00     35.14    256.00         .48


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2285E+01 EXCESS= .0000E+00 OUTFLOW= .2281E+01 BASIN STORAGE= .1289E-02 PERCENT ERROR=
.1


          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               RE3  MANE         2.00     74.17    266.00      1.42      2.00     74.17    266.00        1.42


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6215E+01 EXCESS= .0000E+00 OUTFLOW= .6216E+01 BASIN STORAGE= .6845E-03 PERCENT ERROR=
.0
```



```
          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               RE3  MANE         2.00     73.37    266.00      1.40      2.00     73.37    266.00        1.40


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6143E+01 EXCESS= .0000E+00 OUTFLOW= .6143E+01 BASIN STORAGE= .6814E-03 PERCENT ERROR=
.0


          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               RE3  MANE         2.00     48.52    268.00      1.08      2.00     48.52    268.00        1.08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4722E+01 EXCESS= .0000E+00 OUTFLOW= .4722E+01 BASIN STORAGE= .6793E-03 PERCENT ERROR=
.0


          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE3  MANE         2.00     33.13    270.00       .76      2.00     33.13    270.00         .76


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3336E+01 EXCESS= .0000E+00 OUTFLOW= .3336E+01 BASIN STORAGE= .6983E-03 PERCENT ERROR=
.0


          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE3  MANE         2.00     16.02    272.00       .39      2.00     16.02    272.00         .39


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1702E+01 EXCESS= .0000E+00 OUTFLOW= .1702E+01 BASIN STORAGE= .6575E-03 PERCENT ERROR=
.0


          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R10  MANE         2.00    141.93    260.00      1.43      2.00    141.93    260.00        1.43
```

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1046E+02 EXCESS= .0000E+00 OUTFLOW= .1045E+02 BASIN STORAGE= .1845E-02 PERCENT ERROR=
.1

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R10  MANE         2.00    140.50    260.00      1.41      2.00    140.50    260.00        1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1034E+02 EXCESS= .0000E+00 OUTFLOW= .1033E+02 BASIN STORAGE= .1818E-02 PERCENT ERROR=
.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R10  MANE         2.00     92.85    266.00      1.11      2.00     92.85    266.00        1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8091E+01 EXCESS= .0000E+00 OUTFLOW= .8080E+01 BASIN STORAGE= .1701E-02 PERCENT ERROR=
.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R10  MANE         2.00     64.26    266.00       .80      2.00     64.26    266.00         .80

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5876E+01 EXCESS= .0000E+00 OUTFLOW= .5867E+01 BASIN STORAGE= .1796E-02 PERCENT ERROR=
.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R10  MANE         2.00     33.07    270.00       .43      2.00     33.07    270.00         .43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3177E+01 EXCESS= .0000E+00 OUTFLOW= .3171E+01 BASIN STORAGE= .1875E-02 PERCENT ERROR=
.1

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



```
               RE4  MANE         2.00     33.30    264.00      1.34      2.00     33.30    264.00        1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2853E+01 EXCESS= .0000E+00 OUTFLOW= .2854E+01 BASIN STORAGE= .1069E-03 PERCENT ERROR=
.0

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               RE4  MANE         2.00     32.94    264.00      1.32      2.00     32.94    264.00        1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2820E+01 EXCESS= .0000E+00 OUTFLOW= .2821E+01 BASIN STORAGE= .1052E-03 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               RE4  MANE         2.00     21.16    266.00       .99      2.00     21.16    266.00         .99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2115E+01 EXCESS= .0000E+00 OUTFLOW= .2115E+01 BASIN STORAGE= .1198E-03 PERCENT ERROR=
.0

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE4  MANE         2.00     14.06    268.00       .68      2.00     14.06    268.00         .68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1442E+01 EXCESS= .0000E+00 OUTFLOW= .1442E+01 BASIN STORAGE= .1092E-03 PERCENT ERROR=
.0

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE4  MANE         2.00      6.12    270.00       .31      2.00      6.12    270.00         .31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6571E+00 EXCESS= .0000E+00 OUTFLOW= .6571E+00 BASIN STORAGE= .1077E-03 PERCENT ERROR=
```

```
.0

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R9  MANE         1.20    104.61    250.83      1.44      2.00    104.60    250.00        1.45


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7088E+01 EXCESS= .0000E+00 OUTFLOW= .7090E+01 BASIN STORAGE= .8732E-04 PERCENT ERROR=
.0

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R9  MANE         1.21    103.65    249.50      1.43      2.00    103.65    250.00        1.43


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7006E+01 EXCESS= .0000E+00 OUTFLOW= .7008E+01 BASIN STORAGE= .8777E-04 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R9  MANE         1.42     65.29    256.25      1.13      2.00     65.29    256.00        1.13


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5560E+01 EXCESS= .0000E+00 OUTFLOW= .5561E+01 BASIN STORAGE= .8130E-04 PERCENT ERROR=
.0

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R9  MANE         1.57     45.78    255.48       .84      2.00     45.78    256.00         .84


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4104E+01 EXCESS= .0000E+00 OUTFLOW= .4104E+01 BASIN STORAGE= .7945E-04 PERCENT ERROR=
.0

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R9  MANE         1.87     24.83    245.53       .47      2.00     24.48    258.00         .47
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2301E+01 EXCESS= .0000E+00 OUTFLOW= .2302E+01 BASIN STORAGE= .8181E-04 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R7  MANE         1.71    135.73    253.30      1.45      2.00    134.52    252.00        1.45


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9217E+01 EXCESS= .0000E+00 OUTFLOW= .9221E+01 BASIN STORAGE= .1383E-03 PERCENT ERROR=
.0

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R7  MANE         1.72    134.06    252.28      1.44      2.00    133.30    252.00        1.44


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9119E+01 EXCESS= .0000E+00 OUTFLOW= .9123E+01 BASIN STORAGE= .1401E-03 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R7  MANE         2.00     88.48    254.00      1.15      2.00     88.48    254.00        1.15


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7286E+01 EXCESS= .0000E+00 OUTFLOW= .7288E+01 BASIN STORAGE= .1238E-03 PERCENT ERROR=
.0

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R7  MANE         2.00     62.30    256.00       .85      2.00     62.30    256.00         .85


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5422E+01 EXCESS= .0000E+00 OUTFLOW= .5424E+01 BASIN STORAGE= .1246E-03 PERCENT ERROR=
.0
```

```
FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R7  MANE         2.00     34.02    266.00       .49      2.00     34.02    266.00        .49


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3088E+01 EXCESS= .0000E+00 OUTFLOW= .3090E+01 BASIN STORAGE= .1296E-03 PERCENT ERROR=
-.1


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RS1  MANE         2.00   2198.73    300.00      1.70      2.00   2198.73    300.00       1.70


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2667E+03 EXCESS= .0000E+00 OUTFLOW= .2668E+03 BASIN STORAGE= .3607E-02 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RS1  MANE         2.00   2168.25    300.00      1.69      2.00   2168.25    300.00       1.69


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2639E+03 EXCESS= .0000E+00 OUTFLOW= .2639E+03 BASIN STORAGE= .3673E-02 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RS1  MANE         2.00   1596.84    302.00      1.47      2.00   1596.84    302.00       1.47


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2297E+03 EXCESS= .0000E+00 OUTFLOW= .2297E+03 BASIN STORAGE= .3616E-02 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RS1  MANE         2.00   1163.15    308.00      1.21      2.00   1163.15    308.00       1.21
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1889E+03 EXCESS= .0000E+00 OUTFLOW= .1889E+03 BASIN STORAGE= .3624E-02 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RS1  MANE         2.00    677.57    316.00       .83      2.00    677.57    316.00        .83


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1300E+03 EXCESS= .0000E+00 OUTFLOW= .1300E+03 BASIN STORAGE= .3677E-02 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RS2  MANE          .72   2197.08    299.67      1.70      2.00   2196.86    300.00       1.70


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2683E+03 EXCESS= .0000E+00 OUTFLOW= .2682E+03 BASIN STORAGE= .5435E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RS2  MANE          .73   2165.55    300.24      1.69      2.00   2164.93    300.00       1.69


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2654E+03 EXCESS= .0000E+00 OUTFLOW= .2654E+03 BASIN STORAGE= .5426E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RS2  MANE          .80   1596.57    303.14      1.47      2.00   1596.42    304.00       1.47


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2309E+03 EXCESS= .0000E+00 OUTFLOW= .2309E+03 BASIN STORAGE= .5459E-03 PERCENT ERROR=
.0
```

```
FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RS2  MANE          .88   1163.11    308.18      1.21      2.00   1163.09    308.00        1.21


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1898E+03 EXCESS= .0000E+00 OUTFLOW= .1898E+03 BASIN STORAGE= .5392E-03 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RS2  MANE         1.04    677.43    316.76       .83      2.00    677.22    316.00         .83


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1305E+03 EXCESS= .0000E+00 OUTFLOW= .1305E+03 BASIN STORAGE= .5409E-03 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RHV2  MANE         2.00      7.08    316.00      1.75      2.00      7.08    316.00        1.75


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2888E+01 EXCESS= .0000E+00 OUTFLOW= .2888E+01 BASIN STORAGE= .5656E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RHV2  MANE         2.00      7.02    316.00      1.73      2.00      7.02    316.00        1.73


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2862E+01 EXCESS= .0000E+00 OUTFLOW= .2862E+01 BASIN STORAGE= .5630E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RHV2  MANE         2.00      5.93    320.00      1.50      2.00      5.93    320.00        1.50
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2483E+01 EXCESS= .0000E+00 OUTFLOW= .2483E+01 BASIN STORAGE= .5801E-03 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RHV2  MANE         2.00      4.79    324.00      1.26      2.00      4.79    324.00        1.26


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2081E+01 EXCESS= .0000E+00 OUTFLOW= .2080E+01 BASIN STORAGE= .5954E-03 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RHV2  MANE         2.00      3.29    328.00       .92      2.00      3.29    328.00         .92


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1515E+01 EXCESS= .0000E+00 OUTFLOW= .1515E+01 BASIN STORAGE= .5886E-03 PERCENT ERROR=
.0


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

Appendix I

DCR Existing Conditions 10 Year-
6 Hour HEC-1 Output

```
1****************************************
****************************************
 *                                      *                                                    *
   *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS
   *
 *              JUN   1998              *                                                    *    HYDROLOGIC ENGINEERING
CENTER    *
 *            VERSION 4.1               *                                                    *          609 SECOND STREET
   *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616
   *
 *  RUN DATE   02JUN10  TIME  13:42:33  *                                                    *           (916) 756-1104
   *
 *                                      *                                                    *
   *
 ****************************************
****************************************
```

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

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

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

```
1                                                HEC-1 INPUT                                                          PAGE  1

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

            1           ID   Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 10 Years
            2           ID                                                                                  **
            3           ID   107th Avenue and Union Hills Drive Design Concept Report                       **
            4           ID                                                                            **

            5           ID   PROJECT NO.: FCD 2009C036                        G&M: 10388A                  **

            6           ID                                                                            **

            7           ID   Original HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                  **
            8           ID                         10-Year 6-Hour HEC-1 Model for Existing Conditions      **
            9           ID   Modified HEC-1 Model: DCR10-6.DAT, Goodwin & Marshall, Inc., May 29, 2010     **
           10           ID                         10-Year 6-Hour HEC-1 Model for Existing Conditions      **
           11           ID                                                                                  **

           12           ID   1) NOAA2 Rainfall Data                                                       **
```



```
           13           ID   2) DDMSW V3.5.7 Used                                                         **

           14           ID                                                                                  **

           15           ID   ***************************************************************************
           16           ID   Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 10 Years
           17           ID                                                                                  **
           18           ID   Glendale/Peoria ADMPU Northwest Region Update                                **
           19           ID   Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                **
           20           ID                         REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS               **
           21           ID   Modified HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                  **
           22           ID                         10-Year 6-Hour HEC-1 Model for Existing Conditions      **
           23           ID   1) NOAA 2 Rainfall Data                                                      **
           24           ID   2) DDMSW MCUHP1 V3.3.2 Used                                                  **
           25           ID                                                                                  **
           26           ID   ***************************************************************************
                        *
           27           ID   ***************************************************************************
           28           ID   **                                                                           **
           29           ID   ** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS      **
           30           ID   ** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                 **
           31           ID   ** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005            **
           32           ID   ** THIS IS THE PREFERRED ALTERNATIVE MODEL                                   **
           33           ID   ** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS             **
           34           ID   ** USING LATEST SURVEY DATA.                                                 **
           35           ID   ***************************************************************************
                        *
           36           ID   ***************************************************************************
           37           ID   **                                                                           **
           38           ID   **                    Glendale/Peoria ADMP Update                            **
           39           ID   **                                                                           **
           40           ID   ***************************************************************************
           41           ID   ***************************************************************************
           42           ID   PROJECT:                Glendale Peoria ADMP Update
           43           ID   CLIENT:                 Flood Control District of Maricopa County
           44           ID   PREPARED BY:            Entellus, Inc.
           45           ID   PROJECT No:             FCD 99-44              Entellus 310.017
           46           ID   FILE NAME: LEVEL3.DAT              CREATED DATE: JUNE 6, 2001
           47           ID   STORM:                  100-year 6-hour Storm
           48           ID   DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY
           49           ID
                        *
                        * ***************************************************************************
           50           IT       2                    1000
           51           IO       5
1                                                HEC-1 INPUT                                                          PAGE  2

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

           52           IN      15
                        *
                        *DIAGRAM
                        *
           53           JD    2.03    0.01
           54           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
           55           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
           56           PC   0.962   0.972   0.983   0.991   1.000
           57           JD   2.017    0.50
           58           PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
           59           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
           60           PC   0.962   0.972   0.983   0.991   1.000
           61           JD   1.979    2.80
           62           PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
           63           PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
```

```
 64   PC   0.950   0.963   0.975   0.988   1.000
 65   JD   1.872    16.0
 66   PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 67   PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 68   PC   0.946   0.960   0.973   0.987   1.000
 69   JD   1.648    90.0
 70   PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 71   PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 72   PC   0.927   0.945   0.964   0.982   1.000
      *
      * ******************************************************************************
      *
      * The Following Portion Came from the HEC-1 Model for the Tierra Del Rio
      * Development.  Model CREATED BY A. MERCIER, CMX, ON 01/16/04
      * FILE NAME: TDR6DC.DAT
      *
      * ******************************************************************************
      *

 73   KK     CBA   BASIN
 74   KM   SUB-BASIN CBA
 75   BA   0.007
 76   LG    0.34    0.35    6.80    0.13      11
 77   UC   0.241   0.298
 78   UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 79   UA     100
      *

 80   KK    RCBA
 81   KM   CHANNEL ROUTING
 82   RD    1479   .0095    .030            TRAP       0       4
      *

 83   KK     P28   BASIN
 84   KM   SUB-BASIN P28
 85   BA   0.027
 86   LG    0.25    0.13   10.10    0.04      29
 87   UC   0.417   0.419
 88   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 89   UA     100
      *
```



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

 90   KK    CP28
 91   KM
 92   HC       2
      *

 93   KK    DT28
 94   KM
 95   DT    DB28   1.230
 96   DI       0     100     500    1000    5000
 97   DQ       0     100     500    1000    5000
      *

 98   KK     CBB   BASIN
 99   KM   SUB-BASIN CBB
100   BA   0.017
101   LG    0.34    0.34    4.55    0.35      15
102   UC   0.258   0.213
103   UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
104   UA     100
      *

105   KK    RCBB
106   KM   CHANNEL ROUTING
107   RD    1231   .0244    .030            TRAP       0       4
      *

108   KK   CP28a
109   KM
110   HC       2
      *

111   KK    R28a
112   KM   CHANNEL ROUTING
113   RD    1642   .0018    .030            TRAP      10       4
      *

114   KK     P27   BASIN
115   KM   SUB-BASIN P27
116   BA   0.065
117   LG    0.25    0.15    8.00    0.10      30
118   UC   0.526   0.565
119   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
120   UA     100
      *

121   KK    DT27
122   KM
123   DT    DB27   1.360
124   DI       0     100     500    1000    5000
125   DQ       0     100     500    1000    5000
      *
```



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

126   KK    CP27
127   KM
128   HC       2
      *

129   KK    P27A   BASIN
130   KM   SUB-BASIN P27A
131   BA   0.008
132   LG    0.25    0.25    4.35    0.46      44
133   UC   0.294   0.378
134   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
135   UA     100
      *

136   KK   DT27a
137   KM
138   DT   DB27a   0.210
139   DI       0     100     500    1000    5000
140   DQ       0     100     500    1000    5000
      *

141   KK    P27B   BASIN
142   KM   SUB-BASIN P27B
143   BA   0.013
144   LG    0.26    0.26    5.00    0.32      37
145   UC   0.329   0.449
```

```
146          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
147          UA     100
             *

148          KK   DT27b
149          KM
150          DT   DB27b   0.250
151          DI       0     100     500    1000    5000
152          DQ       0     100     500    1000    5000
             *

153          KK     CBL   BASIN
154          KM  SUB-BASIN CBL
155          BA   0.028
156          LG    0.28    0.29    5.70    0.23      24
157          UC   0.358   0.401
158          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
159          UA     100
             *

160          KK    CCBL
161          KM
162          HC       4
             *
```



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

163          KK    RCBL
164          KM  NATURAL WASH ROUTING
165          RC   0.035   0.035   0.035     840   .0227
166          RX       0     7.5      15      50      60      95   102.5     110
167          RY       5     2.5       0       0       0       0     2.5       5
             *

168          KK     CBK   BASIN
169          KM  SUB-BASIN CBK
170          BA   0.052
171          LG    0.34    0.34    4.65    0.33       6
172          UC   0.374   0.290
173          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
174          UA     100
             *

175          KK    CCBK
176          KM
177          HC       2
             *

178          KK    RCBK
179          KM  CHANNEL ROUTING
180          RD     755   .0238    .030            TRAP      10       4
             *

181          KK     P14   BASIN
182          KM  SUB-BASIN P14
183          BA   0.008
184          LG    0.34    0.34    3.81    0.53       2
185          UC   0.323   0.262
186          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
187          UA     100
             *
```



```
188          KK    RT14
189          KM
190          DT    RB14   1.130
191          DI       0     100     500    1000    5000
192          DQ       0     100     500    1000    5000
             *

193          KK    CP14
194          KM
195          HC       2
             *

196          KK     P15   BASIN
197          KM  SUB-BASIN P15
198          BA   0.006
199          LG    0.33    0.34    3.23    0.81       5
200          UC   0.617   0.829
201          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
202          UA     100
             *
```



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

203          KK    DT15
204          KM
205          DT    DB15   0.260
206          DI       0     100     500    1000    5000
207          DQ       0     100     500    1000    5000
             *

208          KK     CBJ   BASIN
209          KM  SUB-BASIN CBJ
210          BA   0.015
211          LG    0.35    0.35    4.30    0.41      10
212          UC   0.303   0.333
213          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
214          UA     100
             *

215          KK    CP15
216          KM
217          HC       3
             *

218          KK     R15
219          KM  CHANNEL ROUTING
220          RD     800   .0125    .030            TRAP      10       4
             *

221          KK     CBH   BASIN
222          KM  SUB-BASIN CBH
223          BA   0.012
224          LG    0.35    0.35    4.40    0.38      15
225          UC   0.205   0.136
226          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
227          UA     100
             *
             * Route CBH to P25S
             *

228          KK    RCBH
229          RS       2    FLOW       0
```

```
 230          RC    0.02     .02     .02    1500    .0055
 231          RX     280     320     340     350     360     370     390     430
 232          RY       6       4       2       0       0       2       4       6
              *

 233          KK    P25S   BASIN
 234          KM  SUB-BASIN P25S
 235          BA   0.028
 236          LG    0.35    0.35    4.35    0.40      15
 237          UC   0.634   0.564
 238          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 239          UA     100
              *
1                                          HEC-1 INPUT                                          PAGE  7

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

 240          KK   CP25S
 241          KM
 242          HC       2
              *

 243          KK    AFR0
 244          KM  Dummy Combination at Jomax Road and AFR
 245          HC       2
              *
              * ***********************************************************************

 246          KK      E1   BASIN
 247          KM  SUB-BASIN E1
 248          BA   0.014
 249          LG    0.33    0.32    3.95    0.48       2
 250          UC   0.281   0.201
 251          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 252          UA     100
              *

 253          KK     RE1
 254          KM  CHANNEL ROUTING
 255          RD    1993   .0376    .030            TRAP      10       4
              *

 256          KK      E2   BASIN
 257          KM  SUB-BASIN E2
 258          BA   0.016
 259          LG    0.30    0.25    3.95    0.48       5
 260          UC   0.388   0.377
 261          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 262          UA     100
              *

 263          KK     RE2
 264          KM  CHANNEL ROUTING
 265          RD    1108   .0542    .030            TRAP      10       4
              *

 266          KK     P13   BASIN
 267          KM  SUB-BASIN P13
 268          BA   0.059
 269          LG    0.26    0.25    3.92    0.57      27
 270          UC   0.401   0.257
 271          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 272          UA     100
```



```
              *

 273          KK    DT13
 274          KM
 275          DT    DB13   1.060
 276          DI       0     100     500    1000    5000
 277          DQ       0     100     500    1000    5000
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 278          KK    CP13
 279          KM
 280          HC       3
              *

 281          KK     R13
 282          KM  CHANNEL ROUTING
 283          RD    1412   .0035    .025            TRAP      10       4
              *

 284          KK     P12   BASIN
 285          KM  SUB-BASIN P12
 286          BA   0.044
 287          LG    0.25    0.26    3.58    0.71      30
 288          UC   0.544   0.415
 289          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 290          UA     100
              *

 291          KK    DT12
 292          KM
 293          DT    DB12   1.140
 294          DI       0     100     500    1000    5000
 295          DQ       0     100     500    1000    5000
              *

 296          KK    CP12
 297          KM
 298          HC       2
              *

 299          KK      E3   BASIN
 300          KM  SUB-BASIN E3
 301          BA   0.082
 302          LG    0.31    0.28    3.95    0.48       4
 303          UC   0.797   0.827
 304          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 305          UA     100
              *

 306          KK     RE3
 307          KM  CHANNEL ROUTING
 308          RD    1473   .0339    .030            TRAP      10       4
              *

 309          KK     P10   BASIN
 310          KM  SUB-BASIN P10
 311          BA   0.055
 312          LG    0.25    0.26    3.78    0.63      29
 313          UC   0.522   0.329
 314          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
 315          UA     100
              *
1                                        HEC-1 INPUT                                                    PAGE  9
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 316          KK    DT10
 317          KM
 318          DT    DB10   1.080
 319          DI       0     100     500    1000    5000
 320          DQ       0     100     500    1000    5000
              *

 321          KK    CP10
 322          KM
 323          HC       2
              *

 324          KK     R10
 325          KM  CHANNEL ROUTING
 326          RD    1947   .0035    .025            TRAP      10       4
              *

 327          KK     P11   BASIN
 328          KM  SUB-BASIN P11
 329          BA   0.042
 330          LG    0.25    0.25    3.85    0.60      30
 331          UC   0.855   0.892
 332          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 333          UA     100
              *

 334          KK    DT11
 335          KM
 336          DT    DB11   1.200
 337          DI       0     100     500    1000    5000
 338          DQ       0     100     500    1000    5000
              *

 339          KK    CP11
 340          KM
 341          HC       2
              *

 342          KK      E4   BASIN
 343          KM  SUB-BASIN E4
 344          BA   0.040
 345          LG    0.34    0.33    4.00    0.47       3
 346          UC   0.720   0.924
 347          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 348          UA     100
              *

 349          KK     RE4
 350          KM  CHANNEL ROUTING
 351          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 352          RD
 353          RC    .015    .015    .015    1287   .0250
 354          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 355          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *
1                                        HEC-1 INPUT                                                    PAGE 10
```



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

 356          KK      P9   BASIN
 357          KM  SUB-BASIN P9
 358          BA   0.045
 359          LG    0.25    0.25    3.92    0.57      30
 360          UC   0.401   0.370
 361          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 362          UA     100
              *

 363          KK     DT9
 364          KM
 365          DT     DB9   0.920
 366          DI       0     100     500    1000    5000
 367          DQ       0     100     500    1000    5000
              *

 368          KK     HV1   BASIN
 369          KM  SUB-BASIN HV1
 370          BA   0.007
 371          LG    0.27    0.29    3.95    0.55      25
 372          UC   0.527   1.174
 373          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 374          UA     100
              *

 375          KK     CP9
 376          KM
 377          HC       3
              *

 378          KK      R9
 379          KM  CHANNEL ROUTING
 380          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 381          RD
 382          RC    .015    .015    .015     940   .0250
 383          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 384          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *

 385          KK      P8   BASIN
 386          KM  SUB-BASIN P8
 387          BA   0.013
 388          LG    0.25    0.25    4.15    0.52      30
 389          UC   0.647   0.779
 390          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 391          UA     100
              *

 392          KK     DT8
 393          KM
 394          DT     DB8   0.300
 395          DI       0     100     500    1000    5000
 396          DQ       0     100     500    1000    5000
              *
1                                        HEC-1 INPUT                                                    PAGE 11
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 397          KK      P7   BASIN
 398          KM  SUB-BASIN P7
```

```
399          BA   0.014
400          LG    0.25    0.25    3.95    0.56      30
401          UC   0.584   0.691
402          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
403          UA     100
             *

404          KK     DT7
405          KM
406          DT     DB7   0.300
407          DI       0     100     500    1000    5000
408          DQ       0     100     500    1000    5000
             *

409          KK     CP7
410          KM
411          HC       3
             *

412          KK      R7
413          KM  CHANNEL ROUTING
414          RD
415          RC    .015    .015    .015    1488   .0250
416          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
417          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
             *

418          KK      P6   BASIN
419          KM  SUB-BASIN P6
420          BA   0.070
421          LG    0.25    0.25    4.25    0.49      30
422          UC   1.147   1.475
423          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
424          UA     100
             *

425          KK     DT6
426          KM
427          DT     DB6   1.760
428          DI       0     100     500    1000    5000
429          DQ       0     100     500    1000    5000
             *

430          KK     CP6
431          KM
432          HC       2
             *
```



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

433          KK   HPVLY
434          KM
435          HC       3
             *
             *
             * ******************************************************************************
             *
             *

436          KK   A11MA   BASIN
437          KM  SUB-BASIN A11M North Portion
438          BA   0.073
```



```
439          LG    0.32    0.24    8.80    0.06       8
440          UC   0.330   0.153
441          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
442          UA     100
             *
             * On-site Retention Basin
             *

443          KK  A11MAQ
444          DT  DA11MA     3.4
445          DI       0     100    1000    1000
446          DQ       0     100    1000    1000
             *
             *
             *

447          KK  SA11MA STORAGE
448          KM  Online Detention Basin,  6.2 ac-ft.
449          RS       1    STOR       0
450          SV       0     1.5     2.5     4.0     6.2    10.0
451          SE       0       2       3       4       5       6
452          SL       0    3.14    0.62     0.5
453          SS       5      50     2.7     1.5
             *
             * ROUTE RA11MA IS 2000 FT WITH A SLOPE OF .0092
             * CROSS SECTION IS A SMALL NATURAL CHANNEL
             *

454          KK  RA11MA
455          RS       9    FLOW       0
456          RC    0.05    0.06    0.05    2000   .0092
457          RX       0     350     450     480     482     510     610     910
458          RY       7       6       5       1       0       5       6       7
             *

459          KK   A11MB   BASIN
460          KM  SUB-BASIN A11M South Portion
461          BA   0.194
462          LG    0.25    0.15    8.80    0.07      29
463          UC   0.489   0.213
464          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
465          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

466          KK  A11MBQ
467          DT  DA11MB     3.6
468          DI       0     100    1000    1000
469          DQ       0     100    1000    1000
             *

470          KK  SA11MB STORAGE
471          KM  Online Detention Basin, 11.2 ac-ft.
472          RS       1    STOR       0
473          SV       0     3.0     5.5     8.0    11.2    15.0
474          SE       0       2       3       4       5       6
475          SL       0    3.14    0.62     0.5
476          SS       5     200     2.7     1.5
             *
```

```
477          KK   A11NA   BASIN
478          KM  SUB-BASIN A11N - Revised
479          BA   0.076
480          LG    0.29    0.30    5.40    0.25      26
481          UC   0.306   0.178
482          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
483          UA     100
             *

484          KK  SA11NA STORAGE
485          KM  Online Detention Basin,  7.3 ac-ft.
486          RS       1    STOR       0
487          SV       0     1.0     3.0     5.0     7.3    11.0
488          SE       0       2       3       4       5       6
489          SL       0    3.14    0.62     0.5
490          SS       5     100     2.7     1.5
             *

491          KK  RA11NA
492          RS      11    FLOW       0
493          RC    0.05    0.06    0.05    2400  0.0090
494          RX       0     350     450     480     482     510     610     910
495          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE Flows of A11NA, A11MA AND A11MB
             *

496          KK  CA11MB
497          HC       3
             *
             * Route Flow to A11J
             *

498          KK  RA11MB
499          RS       8    FLOW       0
500          RC    0.05    0.06    0.05    3000   .0085
501          RX       0     350     450     480     482     510     610     910
502          RY       7       6       5       1       0       5       6       7
             *
```



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

503          KK    A11O   BASIN
504          KM  SUBASIN A11O
505          BA   0.056
506          LG    0.28    0.27    6.20    0.19      23
507          UC   0.360   0.331
508          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
509          UA     100
             *

510          KK   SA11O STORAGE
511          KM  Online Detention Basin,  3.1 ac-ft.
512          RS       1    STOR       0
513          SV       0     0.5     1.0     2.0     3.1     5.0
514          SE       0       2       3       4       5       6
515          SL       0    3.14    0.62     0.5
516          SS       5      50     2.7     1.5
             *
             * ROUTE A11O to A11KB
             *
```



```
517          KK   RA11O
518          RS       9    FLOW       0
519          RC    0.05     .06     .05    2500   .0085
520          RX       0     350     450     480     482     510     610     910
521          RY       7       6       5       1       0       5       6       7
             *

522          KK   A11KB   BASIN
523          KM  SUB-BASIN A11K North Portion
524          BA   0.107
525          LG    0.25    0.25    4.70    0.36      30
526          UC   0.499   0.270
527          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
528          UA     100
             *

529          KK  SA11KB STORAGE
530          KM  Online Detention Basin, 10.7 ac-ft.
531          RS       1    STOR       0
532          SV       0     3.0     5.0     7.0    10.7    15.0
533          SE       0       2       3       4       5       6
534          SL       0    3.14    0.62     0.5
535          SS       5     100     2.7     1.5
             *

536          KK   A11KA   BASIN
537          KM  SUB-BASIN A11K East Portion
538          BA   0.081
539          LG    0.27    0.27    4.45    0.42      42
540          UC   0.342   0.244
541          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
542          UA     100
             *
```



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

543          KK  SA11KA STORAGE
544          KM  Online Detention Basin,  9.6 ac-ft.
545          RS       1    STOR       0
546          SV       0     2.0     4.0     6.0     9.6    14.0
547          SE       0       2       3       4       5       6
548          SL       0    3.14    0.62     0.5
549          SS       5      50     2.7     1.5
             *
             * ROUTE A11KA to A11KB
             *

550          KK  RA11KA
551          RS       8    FLOW       0
552          RC    0.05     .06     .05    2000   .0075
553          RX       0     350     450     480     482     510     610     910
554          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE A11KB,A11KA AND A11O
             *

555          KK  CA11KB
556          HC       3
             *
             * ROUTE Flow of CA11KB to A11KC
             *
```

```
557          KK  RA11KB
558          RS      8     FLOW       0
559          RC   0.05     0.06    0.05     1600  0.0055
560          RX      0       50     250      350     360     420     620     720
561          RY     10        8       6        2       0       6       8      10
             *

562          KK    A11G   BASIN
563          KM  SUB-BASIN A11G
564          BA   0.060
565          LG    0.31     0.28    4.55     0.35      25
566          UC   0.550    0.491
567          UA      0      4.5    12.6     23.2    35.8    50.0    64.2    76.8    87.4    95.5
568          UA    100
             *
             * ROUTE A11G to A11KC
             *

569          KK  RA11GN
570          RS      7     FLOW       0
571          RC   0.05      .06     .05     2300   0.010
572          RX      0      350     450      480     482     510     610     910
573          RY      7        6       5        1       0       5       6       7
             *
1                                                HEC-1 INPUT                                                          PAGE 16
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

574          KK   A11KC   BASIN
575          KM  SUB-BASIN A11K West Portion
576          BA   0.132
577          LG    0.27     0.26    4.15     0.50      27
578          UC   0.489    0.244
579          UA      0      5.0    16.0     30.0    65.0    77.0    84.0    90.0    94.0    97.0
580          UA    100
             *

581          KK  SA11KC STORAGE
582          KM  Online Detention Basin,  6.4 ac-ft.
583          RS      1     STOR       0
584          SV      0      1.5     2.5      4.0     6.4    10.0
585          SE      0        2       3        4       5       6
586          SL      0     3.14    0.62      0.5
587          SS      5       50     2.7      1.5
             *
             * COMBINE RA11KB, RA11G, AND A11KC
             *

588          KK  CA11KC
589          HC      3
             *
             * ROUTE CA11KC to A11J
             * CROSS SECTION IS A MEDIUM NATURAL CHANNEL
             *

590          KK  RA11KC
591          RS      4     FLOW       0
592          RC   0.05      .06     .05     1000   .0055
593          RX      0       50     250      350     360     420     620     720
594          RY     10        8       6        2       0       6       8      10
             *
```



```
595          KK    A11J   BASIN
596          KM  SUB-BASIN A11J
597          BA   0.112
598          LG    0.29     0.22    7.30     0.12      18
599          UC   0.740    0.589
600          UA      0      4.5    12.6     23.2    35.8    50.0    64.2    76.8    87.4    95.5
601          UA    100
             *

602          KK   SA11J STORAGE
603          KM  Online Detention Basin,  4.4 ac-ft.
604          RS      1     STOR       0
605          SV      0      1.0     2.0      3.0     4.4     7.0
606          SE      0        2       3        4       5       6
607          SL      0     3.14    0.62      0.5
608          SS      5       50     2.7      1.5
             *
             * COMBINE Flows of RA11MB, A11J, AND RA11KC
             *
1                                                HEC-1 INPUT                                                          PAGE 17
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

609          KK   CA11J
610          HC      3
             *

611          KK    A11L   BASIN
612          KM  SUB-BASIN A11L
613          BA   0.264
614          LG    0.27     0.12   11.20     0.03      24
615          UC   0.872    0.652
616          UA      0      5.0    16.0     30.0    65.0    77.0    84.0    90.0    94.0    97.0
617          UA    100
             *
             * On-site Retention Basin
             *     GP

618          KK  DA11LQ
619          DT   DA11L      7.6
620          DI      0      100    1000     1000
621          DQ      0      100    1000     1000
             *
             * ROUTE FLOW TO A11I FROM A11L                                                                          G
             *

622          KK   RA11L
623          RS      9     FLOW       0
624          RC   0.05     0.06    0.05     2600   .0069
625          RX      0      350     450      480     482     510     610     910
626          RY      7        6       5        1       0       5       6       7
             *

627          KK    A11I   BASIN
628          KM  SUB-BASIN A11I
629          BA   0.153
630          LG    0.25     0.10   11.20     0.03      28
631          UC   0.634    0.409
632          UA      0      5.0    16.0     30.0    65.0    77.0    84.0    90.0    94.0    97.0
633          UA    100
             *
             * On-site Retention Basin
             *
```

```
 634          KK  DA11IQ
 635          DT   DA11I     11.7
 636          DI       0      100     1000     1000
 637          DQ       0      100     1000     1000
              *
              * COMBINE Flows of CA11J, A11I, and RA11L
              *
1                                          HEC-1 INPUT                                                    PAGE 18

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

 638          KK   CA11I
 639          HC       3
              *
              * ROUTE FLOW TO A11EB FROM CA11I
              *

 640          KK   RA11I
 641          RS       9    FLOW       0
 642          RC    0.05     .06     .05     4000   .0075
 643          RX       0      50     100      150     180      230      280      330
 644          RY      10       8       6        0       0        6        8       10
              *

 645          KK   A11EA   BASIN
 646          KM  SUB-BASIN A11E East Portion
 647          BA   0.144
 648          LG    0.33    0.31    4.30    0.41      11
 649          UC   0.793   0.737
 650          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 651          UA     100
              *
              * ROUTE FLOW TO A11EB FROM A11EA
              *

 652          KK  RA11EA
 653          RS       6    FLOW       0
 654          RC    0.05     .06     .05    1500   .0065
 655          RX       0      50     250     320     360      420      620      720
 656          RY      10       8       6       0       0        6        8       10
              *

 657          KK   A11EB   BASIN
 658          KM  SUB-BASIN A11E West Portion
 659          BA   0.190
 660          LG    0.34    0.34    4.45    0.38       4
 661          UC   1.133   1.174
 662          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 663          UA     100
              *
              * COMBINE Flows of A11EA, A11EB, and RA11I
              *

 664          KK  CA11EB
 665          HC       3
              *

 666          KK      41   BASIN
 667          KM  SUB-BASIN 41
 668          BA   0.054
 669          LG    0.34    0.34    4.40    0.39      21
 670          UC   0.324   0.225
```



```
 671          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 672          UA     100
              *
1                                          HEC-1 INPUT                                                    PAGE 19

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

 673          KK     B41
 674          KM  Storage Route Runoff through Detention Basin @41
 675          KM  Outlet Structure:  1-48" PIPE
 676          RS       1    STOR       0
 677          SA     .09     .18     .27      .4
 678          SE    1433    1435    1437    1440
 679          SQ       0      23      71     132
              *

 680          KK      42   BASIN
 681          KM  SUB-BASIN 42
 682          BA   0.075
 683          LG    0.35    0.35    4.25    0.42      44
 684          UC   0.324   0.231
 685          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 686          UA     100
              *

 687          KK     B42
 688          KM  Storage Route Runoff through Detention Basin @42
 689          KM  Outlet Structure:  48" PIPE
 690          RS       1    STOR       0
 691          SA     .07     .13     .21     .31      .4
 692          SE    1427    1429    1431    1433    1435
 693          SQ       0      23      71     112     147
              *
              * COMBINE Flows of 41 and 42                                                                G
              *

 694          KK     C41
 695          HC       2
              *
              * ROUTE FLOW TO A11F FROM C41
              *

 696          KK    RC41
 697          RS      14    FLOW       0
 698          RC    0.05     .06     .05     5200   .0075
 699          RX       0      50      70      90     110      130      150      200
 700          RY       6       5       3       0       0        3        5        6
              *

 701          KK    A11F   BASIN
 702          KM  SUB-BASIN A11F
 703          BA   0.334
 704          LG    0.33    0.31    4.35    0.40       8
 705          UC   0.837   0.581
 706          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 707          UA     100
              *
              * COMBINE Flows of A11F and RC41                                                            G
              *
1                                          HEC-1 INPUT                                                    PAGE 20

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

```
708          KK   CA11F
709          HC       2
             *
             * COMBINE Flows of CA11F and CA11EB
             *

710          KK   CA11E
711          HC       2
             *
             * ROUTE FLOW TO A11A FROM CA11E
             *

712          KK   RA11E
713          RS       3    FLOW       0
714          RC    0.05     .06     .05    1700   .0070
715          RX       0      50      70      90     110     130     150     200
716          RY       6       5       3       0       0       3       5       6
             *

717          KK    A09U   BASIN
718          KM  SUB-BASIN A09U
719          BA   0.175
720          LG    0.32    0.30    4.20    0.43      22
721          UC   0.450   0.302
722          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
723          UA     100
             *
             * Happy Valley RD. Improvements
             * 0 % FLOW GOES DOWN to South,100% WEST along HAPPY VALLEY
             *

724          KK   DA09U
725          DT   A09UI     0.0     0.0
726          DI     0.0    10.0   100.0  1000.0  5000.0     0.0     0.0     0.0     0.0     0.0
727          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CA09T FROM A09U                                                    G
             *

728          KK  RA09UW
729          RS       9    FLOW       0
730          RC    0.05    0.03     .05    4000   .0075
731          RX       0     200     210     220     240     270     295     595
732          RY     4.5       2       0       2       3       3     3.5     4.5
             *

733          KK    A09T   BASIN
734          KM  SUB-BASIN A09T
735          BA   0.182
736          LG    0.33    0.31    4.30    0.41       2
737          UC   0.752   0.547
738          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
739          UA     100
             *
             * COMBINE  CA09U AND A09T
             *
```



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

740          KK   CA09T
741          HC       2
```



```
             *
             * HAPPY VALLEY ROAD Improvements, 100% Flow TO THE WEST
             *

742          KK   DA09T
743          DT   A09TI     0.0     0.0
744          DI     0.0    10.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0
745          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CX22 FROM CA09T
             *

746          KK  RA09TW
747          RS       2    FLOW       0
748          RC    0.05    0.03    0.05    1500   .0025
749          RX       0     200     210     220     230     270     295     595
750          RY       6       4       0       0       4       4     5.5       7
             *

751          KK    A11A   BASIN
752          KM  SUB-BASIN A11A
753          BA   0.298
754          LG    0.23    0.29    6.00    0.21      34
755          UC   0.721   0.472
756          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
757          UA     100
             *
             * On-site Retention Basin
             *     GP

758          KK  DA11AQ
759          DT   DA11A     7.7
760          DI       0     100    1000    1000
761          DQ       0     100    1000    1000
             *
             * Combine  Flows of RA09TW, CA11E,and A11A
             *

762          KK    CX23
763          HC       3
             *
             * ROUTE FLOW TO CS1 FROM CX23                                                       GP
             *

764          KK    RX23
765          RS       7    FLOW       0
766          RC    0.05     .06     .05    4000   .0074
767          RX       0      50     150     175     275     300     400     500
768          RY      12       8       6       0       0       6       8      12
             *
```



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

769          KK      S1   BASIN
770          KM  SUB-BASIN S1
771          BA   0.124
772          LG    0.31    0.27    4.25    0.47      12
773          UC   0.790   0.720
774          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
775          UA     100
             *
```

```
776          KK      P2   BASIN
777          KM  SUB-BASIN P2
778          BA   0.051
779          LG    0.25    0.25    4.45    0.43      29
780          UC   0.404   0.266
781          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
782          UA     100
             *

783          KK     RT2
784          KM
785          DT     RB2   4.740
786          DI       0     100     500    1000    5000
787          DQ       0     100     500    1000    5000
             *

788          KK     CS1
789          KM
790          HC       3
             *

791          KK     RS1
792          KM  CHANNEL ROUTING
793          RD     924   .0108    .035            TRAP     200       6
             *

794          KK      S2   BASIN
795          KM  SUB-BASIN S2
796          BA   0.012
797          LG    0.34    0.33    4.70    0.32       3
798          UC   0.270   0.156
799          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
800          UA     100
             *

801          KK      S3   BASIN
802          KM  SUB-BASIN S3
803          BA   0.006
804          LG    0.30    0.25    4.65    0.32       5
805          UC   0.208   0.126
806          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
807          UA     100
             *
```



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

808          KK     CS2
809          KM
810          HC       3
             *

811          KK     RS2
812          KM  CHANNEL ROUTING
813          RD     665   .0075    .020            TRAP      20       4
             *

814          KK      P3   BASIN
815          KM  SUB-BASIN P3
816          BA   0.054
817          LG    0.25    0.25    4.45    0.43      30
818          UC   0.551   0.475
819          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



```
820          UA     100
             *

821          KK     RT3
822          KM
823          DT     RB3   5.230
824          DI       0     100     500    1000    5000
825          DQ       0     100     500    1000    5000
             *

826          KK     CP3
827          KM
828          HC       2
             *

829          KK     P4b   BASIN
830          KM  SUB-BASIN P4b
831          BA   0.017
832          LG    0.25    0.25    4.45    0.43      30
833          UC   0.287   0.173
834          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
835          UA     100
             *

836          KK    RT4b
837          KM
838          DT    RB4b   0.320
839          DI       0     100     500    1000    5000
840          DQ       0     100     500    1000    5000
             *

841          KK      S4   BASIN
842          KM  SUB-BASIN S4
843          BA   0.014
844          LG    0.33    0.31    4.80    0.30       2
845          UC   0.493   0.772
846          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
847          UA     100
             *
```



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

848          KK      P1   BASIN
849          KM  SUB-BASIN P1
850          BA   0.029
851          LG    0.34    0.38    6.00    0.18       1
852          UC   0.496   0.552
853          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
854          UA     100
             *

855          KK     DT1
856          KM
857          DT     DB1   0.500
858          DI       0     100     500    1000    5000
859          DQ       0     100     500    1000    5000
             *

860          KK     CP1
861          KM
862          HC       2
             *
```

```
863          KK     HV2   BASIN
864          KM  SUB-BASIN HV2
865          BA   0.031
866          LG    0.25    0.25    4.45    0.43      29
867          UC   1.500   5.175
868          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
869          UA     100
             *

870          KK    RHV2
871          KM  CHANNEL ROUTING
872          RD     910   .0033    .015            TRAP      10       4
             *

873          KK   DTHV2
874          KM
875          DT   DBHV2   0.680
876          DI       0     100     500    1000    5000
877          DQ       0     100     500    1000    5000
             *

878          KK     P4a   BASIN
879          KM  SUB-BASIN P4a
880          BA   0.039
881          LG    0.25    0.25    4.00    0.55      30
882          UC   0.636   0.586
883          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
884          UA     100
             *
```



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

885          KK    DT4a
886          KM
887          DT    DB4a   0.740
888          DI       0     100     500    1000    5000
889          DQ       0     100     500    1000    5000
             *

890          KK   SOUTH
891          KM  Combined at South HVR
892          HC       5
             *

893          KK    N110   BASIN
894          KM  SUB-BASIN N110
895          BA   0.054
896          LG    0.35    0.35    4.50    0.36       0
897          UC   0.632   0.483
898          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
899          UA     100
             *
             * A WASH TO THE WEST THAT CARRIES A MAX. FLOW OF 47 CFS.
             *

900          KK   DN110
901          DT   N110I
902          DI       0      30      60     100     300     600    1200    2200
903          DQ       0      27      54      90     270     553    1153    2153
             *
             * ROUTE RN110W IS 2752 FT WITH A SLOPE OF .0025
```



```
             * CROSS SECTION IS A MEDIUM NATURAL WASH
             *

904          KK  RN110W
905          RS      15    FLOW       0
906          RC    0.05     .06     .05    2752   .0025
907          RX       0      50     250     350     360     420     620     720
908          RY      10       8       6       2       0       6       8      10
             *
             * RECOVER DIVERTED FLOW FROM CA09T
             *

909          KK  DRA09T
910          DR   A09TI
             *
             * ROUTE RA09TS IS 2824 FT WITH A SLOPE OF .0057
             * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
             * ROUTE FLOW TO CA09R FROM CA09T
             *
```



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

911          KK  RA09TS
912          RS      15    FLOW       0
913          RC    0.05     .06     .05    2824   .0057
914          RX       0     400     800    1200    1600    2000    2400    2800
915          RY       3       1      .5       0       0      .5       1       3
             *

916          KK    A09R   BASIN
917          KM  SUB-BASIN A09R
918          BA   0.144
919          LG    0.35    0.34    4.25    0.43       1
920          UC   1.090   0.945
921          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
922          UA     100
             *
             * COMBINE  CN110,  CA09T, AND A09R
             *

923          KK   CA09R
924          HC       3
             *
             * EXISTING CONDITIONS FLOW DOWN LAKE PLEASANT RD
             *

925          KK   DA09R
926          DT   A09RI
927          DI       0      10      50     100     300     500     800    1000    2000
928          DQ       0     9.9    49.3    99.4   299.5     499     799     999    1999
             *
             * ROUTE RA09RW IS 1609 FT WITH A SLOPE OF .0012
             * *** ROUTE FLOW TO CA09S FROM CA09R  ************************
             *

929          KK  RA09RW
930          RS      15    FLOW       0
931          RC    0.05    0.04     .05    1609  0.0012
932          RX       0     200     300     325     340     360     380     880
933          RY       5       4       3       2       3       3       2     3.5
             *
```

```
934          KK    A09S   BASIN
935          KM  SUB-BASIN A09S
936          BA   0.072
937          LG    0.13    0.25    4.90    0.40      71
938          UC   0.626   0.548
939          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
940          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

941          KK  DA09SQ
942          DT   DA09S     7.0
943          DI       0     100    1000    1000
944          DQ       0     100    1000    1000
             *
             * *** COMBINE  RA09RW AND A09S ***********************************************
             *

945          KK   CA09S
946          HC       2
             *

947          KK  RA09SW
948          RS       6    FLOW       0
949          RC    0.03    0.03    0.03    1600  0.0085
950          RX       0      50     100     120     140     160     210     260
951          RY       6       4       3       0       0       3       4       6
             *

952          KK   A09QA   BASIN
953          KM  SUB-BASIN A09Q North Portion
954          BA   0.092
955          LG    0.34    0.34    4.20    0.44       2
956          UC   0.731   0.470
957          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
958          UA     100
             *
             * *** COMBINE  Flows of RA09SW and A09QA ***************************************
             *

959          KK  CA09QA
960          HC       2
             *
             * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ***************************
             * FUTURE SPLIT: ALL EXISTING FLOW TO THE SOUTH
             *

961          KK  DA09QA
962          DT  A09QAI
963          DI       0      10      30      50     100     500    1000    2000
964          DQ       0     9.2    29.3    49.4    99.5     499     999    1999
             *
             * *** ROUTE CA09QA TO CA99YA ******************************************
             *

965          KK  RA09QW
966          RS       4    FLOW       0
967          RC    0.03    0.03    0.03    2400  0.0085
968          RX       0      50     100     120     140     160     210     260
```



```
969          RY       6       4       3       0       0       3       4       6
             *
```



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

970          KK   A99YA   BASIN
971          KM  SUB-BASIN A99Y East Portion
972          BA   0.103
973          LG    0.35    0.34    4.90    0.29       1
974          UC   0.568   0.414
975          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
976          UA     100
             *
             * *** COMBINE  RA09QW AND A99YA ***********************************************
             *

977          KK  CA99YA
978          HC       2
             *

979          KK  RA99YA
980          RS       3    FLOW       0
981          RC    0.03    0.03    0.03    2000  0.0085
982          RX       0      50     100     120     140     160     210     260
983          RY       6       4       3       0       0       3       4       6
             *

984          KK   A99YB   BASIN
985          KM  SUB-BASIN A99Y West Portion
986          BA   0.171
987          LG    0.34    0.34    3.78    0.55       4
988          UC   0.764   0.424
989          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
990          UA     100
             *
             * *** COMBINE  RA99YA, SOUTH AND A99YB ********************************************
             *

991          KK  CA99YB
992          HC       3
             *
             *
             * Dummy Combining at AFR and South of Happy Valley Rd.
             *

993          KK    AFR1
994          HC       3
             *
             * RECOVER DIVERTED FLOW FROM A09U
             *

995          KK  BA09UI
996          DR   A09UI
             *
             * *** ROUTE RA09US ***********************************************************
             * ROUTE RA09US IS 3000 FT WITH A SLOPE OF 0.0076
             * CROSS SECTION IS A SMALL ROAD WITH HOMES ON THE WEST SIDE
             * ALONG local STREETS
             * *** ROUTE FLOW TO N11NB FROM Happy Valley RD (CA09U)
             *
```

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

 997          KK  RA09US
 998          RS       6    FLOW       0
 999          RC    0.04    0.03    0.04    3000  0.0076
1000          RX       0       1      54      55      95      96     124     624
1001          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *
              *

1002          KK   N11NB   BASIN
1003          KM  SUB-BASIN N11NBN
1004          BA   0.140
1005          LG    0.31    0.27    4.70    0.31       4
1006          UC   0.767   0.672
1007          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1008          UA     100
              *
              * Combining Flows
              *

1009          KK  CN11NB
1010          HC       2
              *
              * ROUTE RN11NW IS 2521 FT WITH A SLOPE OF 0.0016
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO BOTH SIDES
              * ALONG Mariposa GrANDe
              *

1011          KK  RN11NW
1012          RS      12    FLOW       0
1013          RC    0.04    0.03    0.04    2521  0.0016
1014          RX       0       1      70      71      96      97     182     183
1015          RY    9.25    1.25    0.25       0       0    0.25    1.25    9.25
              *
              * RECOVER DIVERTED FLOW FROM N11OI

1016          KK  8N11OI
1017          DR   N11OI
              *
              * ROUTE RN11OS IS 1184 FT WITH A SLOPE OF 0.0068
              * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
              * ALONG natural pathways
              * ROUTE FLOW TO Mariposa GrANDe (CN11M) FROM CN11O
              *

1018          KK  RN11OS
1019          RS      15    FLOW       0
1020          RC    0.05     .06     .05    1184  0.0068
1021          RX       0     400     800    1200    1600    2000    2400    2800
1022          RY       3       1      .5       0       0      .5       1       3
              *
```



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

1023          KK    N11M   BASIN
1024          KM  SUB-BASIN N11M
1025          BA   0.100
1026          LG    0.35    0.35    4.15    0.45       0
1027          UC   0.660   0.374
1028          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1029          UA     100
              *
              * *** COMBINE  CN11M ****************************************************
              * COMBINE BASIN N11M, RN11OS, and RN11NW
              * Mariposa GrANDe AND 95st AVE
              *

1030          KK   CN11M
1031          HC       3
              *
              * *** DIVERSION DN11M ******************************************************
              * DIVERSION MAIN 95th AVE(SOUTH), SPLIT (WEST)
              *

1032          KK   DN11M
1033          DT   N11MI
1034          DI       0       1      40      80     100     300     600    1200    2200
1035          DQ       0     .25      10      20      25      75     150     184     184
              *
              * ROUTE RN11MS IS 2689 FT WITH A SLOPE OF 0.0071
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO ONE SIDE
              * ALONG 95st AVE
              * ROUTE FLOW TO PINNACLE PEAK (CN11J) FROM Mariposa GrANDe (CN11M)
              *

1036          KK  RN11MS
1037          RS       7    FLOW       0
1038          RC    0.05    0.03    0.05    2689  0.0071
1039          RX       0       1      50      51      73      74     124     524
1040          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *

1041          KK    N11J   BASIN
1042          KM  SUB-BASIN N11J
1043          BA   0.244
1044          LG    0.30    0.25    4.10    0.51      13
1045          UC   1.122   0.817
1046          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1047          UA     100
              *
              * *** STORAGE ROUTING LN11J ***********************************************
              * *** SMALL SUBDIVISION STORAGE (ACCOUNTED) ********************************
              *
```



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

1048          KK   LN11J
1049          DT  LN11JD     1.8
1050          DI       0     100    1000   10000
1051          DQ       0     100    1000   10000
              *
              * COMBINE N11J AND RN11KW
              * Pinnacle Peak AND 95st AVE
              *

1052          KK   CN11J
1053          HC       2
              *
              * Existing Condition 100% to South
              *

1054          KK   DN11J
```

```
1055        DT   N11JI
1056        DI       0      10     100    1000    5000
1057        DQ       0      10     100    1000    5000
            *
            * ROUTE RN11JW IS 1080 FT WITH A SLOPE OF .0019
            * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
            *
            * ROUTE FLOW TO CX4 FROM CN11J
            *

1058        KK  RN11JW
1059        RS       1    FLOW       0
1060        RC     .04    0.04     .04    1080   .0019
1061        RX       0     100     140     160     200     300     400     500
1062        RY      10       9       0       0       9      10      11      12
            *
            * RECOVER DIVERTED FLOW FROM CN11M
            *

1063        KK  DRN11M
1064        DR   N11MI
            *
            * ROUTE RN11MW IS 3871 FT WITH A SLOPE OF .0046
            * CROSS SECTION IS A ROAD WITH HOMES TO THE WEST SIDE
            * ROUTE FLOW TO CX4 FROM CN11M
            *

1065        KK  RN11MW
1066        RS      15    FLOW       0
1067        RC    0.05    0.04     .05    3871   .0046
1068        RX       0       1      50      51      76      77     102     602
1069        RY      10       2       1    0.75    0.75       1       2     3.5
            *
            * *** COMBINE  CN11J AND CN11M ***********************************************
            *
```



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

1070        KK     CX4
1071        HC       2
            *
            * ROUTE RX4 IS 2164 FT WITH A SLOPE OF .0023
            * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
            * *** ROUTE FLOW TO CA09O FROM CX4  ***************************
            *

1072        KK     RX4
1073        RS       6    FLOW      -1
1074        RC     .04    0.04     .04    2164  0.0023
1075        RX       0     100     140     160     200     300     400     500
1076        RY      10       9       0       0       9      10      11      12
            *

1077        KK    A09O   BASIN
1078        KM  SUB-BASIN A09O
1079        BA   0.194
1080        LG    0.32    0.29    4.40    0.41       6
1081        UC   1.263   1.308
1082        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1083        UA     100
            *
```



```
1084        KK   SA09O STORAGE
1085        KM  Online Detention Basin, 28.5 ac-ft.
1086        RS       1    STOR       0
1087        SV       0     9.0    15.0    21.0    28.5    38.0
1088        SE       0       2       3       4       5       6
1089        SL       0   7.065    0.62     0.5
1090        SS       5     100     2.7     1.5
            *
            * RECOVER DIVERTED FLOW FROM A09RI
            *

1091        KK  BA09RI
1092        DR   A09RI
            *
            * ROUTE RA09RS IS 3928 FT WITH A SLOPE OF .0074
            * CROSS SECTION IS A HIGHWAY
            * ROUTE FLOW TO CA09O FROM CA09R
            *

1093        KK  RA09RS
1094        RS      12    FLOW       0
1095        RC    0.05    0.04    0.05    3928   .0074
1096        RX       0     100     200     225     250     275     375     475
1097        RY       6       5       4       3       3       4       5       6
            *
            * *** COMBINE  CX4, RA09RS, AND A09O ******************************************
            *
```



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

1098        KK   CA09O
1099        HC       3
            *
            * Existing Condition: All Flow to South
            *

1100        KK   DA09O
1101        DT   A09OI
1102        DI       0     100    1000    5000
1103        DQ       0     100    1000    5000
            *
            *
            * ROUTE RA09OW IS 1076 FT WITH A SLOPE OF .0019
            * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
            * *** ROUTE FLOW TO CA09P FROM CA09O  **************************
            *

1104        KK  RA09OW
1105        RS       1    FLOW       0
1106        RC     .04     .04     .04    1076  0.0019
1107        RX       0     100     140     160     200     300     400     500
1108        RY      10       9       0       0       9      10      11      12
            *

1109        KK    A09P   BASIN
1110        KM  SUB-BASIN A09P
1111        BA   0.187
1112        LG    0.32    0.29    4.65    0.34       6
1113        UC   0.981   0.716
1114        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1115        UA     100
            *
```

```
1116          KK   SA09P STORAGE
1117          KM  Online Detention Basin, 25.2 ac-ft.
1118          RS       1     STOR       0
1119          SV       0      7.0     13.0     19.0     25.2     33.0
1120          SE       0        2        3        4        5        6
1121          SL       0    7.065     0.62      0.5
1122          SS       5      100      2.7      1.5
              *
              * *** COMBINE  CA09O AND A09P ***********************************************
              *

1123          KK   CA09P
1124          HC       2
              *
              * ROUTE RA09P IS 884 FT WITH A SLOPE OF .0136
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09Q FROM CA09P  *************************
              *
```



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

1125          KK   RA09P
1126          RS       2    FLOW       0
1127          RC     .04     .04      .04      884   0.0136
1128          RX       0     100      140      160      200      300      400      500
1129          RY      10       9        0        0        9       10       11       12
              *
              * Retrieve Diverted Flow of A09QAI
              *

1130          KK  BA09QA
1131          DR  A09QAI
              *
              * *** ROUTE FLOW TO CA09QB FROM CA09QA *************************
              *

1132          KK  RA09QB
1133          RS       8    FLOW       0
1134          RC    0.05     .06      .05     2700   0.0095
1135          RX       0     100      300      360      380      420      620      720
1136          RY      10       8        6        2        0        6        8       10
              *

1137          KK   A09QB   BASIN
1138          KM  SUB-BASIN A09Q South Portion
1139          BA   0.144
1140          LG    0.30    0.25     4.15     0.44        5
1141          UC   0.857   0.625
1142          UA       0     5.0     16.0     30.0     65.0     77.0     84.0     90.0     94.0     97.0
1143          UA     100
              *
              * *** COMBINE Flows of A09QA,A09QB  and RA09P  *********************************
              *

1144          KK   CA09Q
1145          HC       3
              *
              * Existing Condition:All Flow to South
              *

1146          KK   DA09Q
```



```
1147          DT   A09QI
1148          DI       0      10      100      500     1000     5000
1149          DQ       0      10      100      500     1000     5000
              *
              * ROUTE RA09QW IS 2468 FT WITH A SLOPE OF 0.0158
              * CROSS SECTION IS A MEDIUM CHANNEL
              * *** ROUTE CA09Q TO CA10A ********************************************
              *
```



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

1150          KK  RA09QW
1151          RS       1    FLOW       0
1152          RC     .05     .05      .05     2468   0.0158
1153          RX       0     100      140      160      200      300      400      500
1154          RY      10       9        0        0        9       10       11       12
              *

1155          KK    A10A   BASIN
1156          KM  SUB-BASIN A10A
1157          BA   0.189
1158          LG    0.33    0.32     5.30     0.24        2
1159          UC   0.714   0.466
1160          UA       0     4.5     12.6     23.2     35.8     50.0     64.2     76.8     87.4     95.5
1161          UA     100
              *

1162          KK   CA10A
1163          HC       2
              *
              * ROUTE RA10A IS 2831 FT WITH A SLOPE OF 0.0148
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *

1164          KK   RA10A
1165          RS       2    FLOW       0
1166          RC    0.05    0.05     0.05     1553      .03
1167          RX       0     100      140      170      210      310      410      510
1168          RY      10       9        0        0        9       10       11       12
              *

1169          KK    A99X   BASIN
1170          KM  SUB-BASIN A99X
1171          BA   0.264
1172          LG    0.21    0.28     4.20     0.53       39
1173          UC   0.527   0.261
1174          UA       0     4.5     12.6     23.2     35.8     50.0     64.2     76.8     87.4     95.5
1175          UA     100
              *

1176          KK   CA99X
1177          HC       2
              *
              * Dummy Combination at AFR and Pinnacle Peak Rd.
              *

1178          KK    AFR2
1179          HC       2
              *
              * Retrieve Diverted Flow of A09OI
              *
```

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

1180          KK  BA09OI
1181          DR   A09OI
              *
              * ROUTE RA09OS IS 5602 FT WITH A SLOPE OF .0062
              * CROSS SECTION IS A RURAL ROAD WITH A DITCH RIGHT
              * *** ROUTE FLOW TO CX7 FROM CA09O  ****************************
              *

1182          KK  RA09OS
1183          RS       8    FLOW       0
1184          RC     .03     .03     .03    5602   .0062
1185          RX       0     200     220   227.5     235     255     300     460
1186          RY       4       2       0       0       2     2.5       3       4
              *

1187          KK    A09K   BASIN
1188          KM  SUB-BASIN A09K
1189          BA   0.410
1190          LG    0.34    0.34    4.40    0.39       2
1191          UC   1.156   0.791
1192          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1193          UA     100
              *

1194          KK   DA09K
1195          KM  DIVERSION DA09K
1196          KM  DIVERSION SPLITS FLOW WITHIN SUB-BASIN A09K BASED ON TOPOGRAPHICAL SPLIT
1197          KM  A PORTION OF THE FLOW IS DIRECTED WEST TO LAKE PLEASANT PARKWAY
1198          KM  THE REMAINDER IS DIRECTED TO N11FA
1199          DT   A09KI
1200          DI       0     100     200     300     400     500     600     700    2000
1201          DQ       0      73     146     219     292     365     438     511    1460
              *

1202          KK     CX7
1203          KM  COMBINE Flows from North and East
1204          HC       2
              *

1205          KK    RX7S
1206          KM  ROUTE FLOW SOUTH TO CX8 FROM CX7
1207          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1208          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1209          KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE WEST SIDE
1210          RS       5    FLOW       0
1211          RC     .03     .03     .03    2800    .002
1212          RX       0       3       9      15      35      41      47      50
1213          RY       5       4       2       0       0       2       4       5
              *
              * North Portion of N11N
              *
```



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

1214          KK   N11NA   BASIN
1215          KM  UPPER PART OF SUBBASIN N11N
1216          BA   0.022
1217          LG    0.35    0.35    4.00    0.47      29
```



```
1218          UC   0.229   0.146
1219          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1220          UA     100
              *

1221          KK  RN11NA
1222          RS      13    FLOW       0
1223          RC    0.05    0.04     .05    3500  0.0083
1224          RX       0       1      51      52      82      83     108     608
1225          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.75
              *

1226          KK   N11NC   BASIN
1227          KM  East PART OF SUBBASIN N11N
1228          BA   0.171
1229          LG    0.31    0.29    4.20    0.46       7
1230          UC   0.608   0.382
1231          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1232          UA     100
              *

1233          KK  CN11NC
1234          HC       2
              *

1235          KK  DN11NC
1236          KM  DIVERT FLOW 10-YEAR RUNOFF (149 cfs) to East
1237          DT   N11NP
1238          DI       0     149    2000
1239          DQ       0     149     149
              *

1240          KK  RN11NC
1241          KM  ROUTE N11NC to South
1242          RS       5    FLOW      -1
1243          RC    0.05    0.04     .05    1600  0.0089
1244          RX       0      10      20      30      70      80      90     100
1245          RY       3       2       1       0       0       1       2       3
              *

1246          KK   N11ND   BASIN
1247          KM  LOWER PART OF SUBBASIN N11N
1248          BA   0.053
1249          LG    0.29    0.25    4.60    0.36      12
1250          UC   0.748   0.687
1251          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1252          UA     100
              *
```



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

1253          KK    N11K   BASIN
1254          KM  SUB-BASIN N11K
1255          BA   0.167
1256          LG    0.30    0.25    4.20    0.46       9
1257          UC   1.030   0.825
1258          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1259          UA     100
              *

1260          KK   CN11K
1261          KM  COMBINE N11K, RN11NC AND N11ND AT 91ST AVENUE AND PINNACLE PEAK
```

```
1262        HC       3
            *
            * Divert 10-Year Flow (55 cfs) into SD to East

1263        KK  DN11KS
1264        DT   N11KP
1265        DI       0      55     500    2000
1266        DQ       0      55      55      55
            *

1267        KK   RN11K
1268        RS      15    FLOW       0
1269        RC     .04    0.04     .04    5178   .0062
1270        RX       0     200     230     260     280     310     340     540
1271        RY      10       8       7       0       0       7       8      10
            *
            * Initial flow goes to west and excess flow splits to southeast
            * DIVERSION HAS BEEN MODIFIED FROM ORIGINAL ENTELLUS STUDY
            * PER CITY OF PEORIA COMMENTS (1/18/05)
            *

1272        KK     DX5
1273        DT     X5I
1274        DI       0      10     100     200     300     400     500    1000    2000
1275        DQ       0       0       0      94     154     249     344     844    1844
            *
            * ROUTE RX5W IS 1292 FT WITH A SLOPE OF 0.0008
            * CROSS SECTION IS DIRT ROAD
            * WEST ALONG DEER VALLEY RD
            * ROUTE FLOW FROM 91st AVE. (CN11H) TO WEST OF 91st AVE (CX5)
            *

1276        KK    RX5W
1277        RS      11    FLOW       0
1278        RC    0.05   0.045    0.05    1292   .0008
1279        RX       0     200     225     250     270     295     320     520
1280        RY    4.25    2.25    1.25       0       0    1.25    2.25    4.25
            *
1                                          HEC-1 INPUT                                                    PAGE 39

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

1281        KK    N11H   BASIN
1282        KM  SUB-BASIN N11H
1283        BA   0.419
1284        LG    0.35    0.35    4.50    0.36       0
1285        UC   1.162   0.741
1286        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1287        UA     100
            *
            * COMBINE RX5W AND BASIN N11H
            *

1288        KK   CN11H
1289        HC       2
            *
            * NEW ALTERNATIVE CHANNEL ACROSS STATE LAND
            *

1290        KK   RN11H
1291        KM  ROUTE FLOW WEST TO CN11G FROM CN11H
1292        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1293        KM  3:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
```



```
1294        KM  ADJACENT TO DEAR VALLEY ROAD ON THE NORTH SIDE
1295        RS       7    FLOW       0
1296        RC     .03     .03     .03    3300    .001
1297        RX       0       3      12      18      38      44      53      56
1298        RY       6       5       2       0       0       2       5       6
            *
            * RECOVER DIVERTED FLOW FROM N11J                                                              G
            *

1299        KK  BN11JI
1300        DR   N11JI
            *
            * ROUTE RN11JS IS 5670 FT WITH A SLOPE OF 0.0062
            * CROSS SECTION IS A SMALL NATURAL WASH
            * ALONG NATURAL WASH
            * ROUTE FLOW TO DEER VALLEY RD. (CN11G) FROM PINNACLE PEAK (CN11J)
            *

1301        KK  RN11JS
1302        RS      12    FLOW       0
1303        RC    0.05    0.06    0.05    5670  0.0062
1304        RX       0     350     450     480     482     510     610     910
1305        RY       7       6       5       1       0       5       6       7
            *

1306        KK    N11G   BASIN
1307        KM  SUB-BASIN N11G
1308        BA   0.524
1309        LG    0.35    0.35    4.35    0.40       0
1310        UC   1.170   0.667
1311        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1312        UA     100
            *
            * COMBINE  RN11JS, RN11H AND N11G AT 98TH AVE
            *
1                                          HEC-1 INPUT                                                    PAGE 40

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

1313        KK   CN11G
1314        HC       3
            *

1315        KK   RN11G
1316        KM  ROUTE FLOW SOUTH TO CN11FB FROM CN11G
1317        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1318        KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1319        KM  ADJACENT TO 98TH AVE ON THE WEST SIDE
1320        RS       4    FLOW       0
1321        RC     .03     .03     .03    2500    .002
1322        RX       0      12      24      36      62      68      72      80
1323        RY       6       4       2       0       0       2       4       6
            *

1324        KK   N11DA   BASIN
1325        KM  SUB-BASIN N11DA CREATED BY CVL 7/04
1326        BA   0.256
1327        LG    0.25    0.25    4.60    0.39      30
1328        UC   0.998   0.672
1329        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1330        UA     100
            *
            * DOVE VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
```

```
                 * STORAGE MODIFIED PER CITY OF PEORIA TO DISCHARGE UP TO 200CFS WEST
                 * TOTAL DETENTION/RETENTION VOLUME = 18 AC-FT, 10 AC-FT MODELED AS RETENTION
                 * 8 AC-FT MODELED AS ON-LINE DETENTION BASIN ON NEC OF RGL & 95TH
                 *

1331             KK  LN11DA
1332             DT  LDAOUT     8.0
1333             DI       0     100    1000   10000
1334             DQ       0     100    1000   10000
                 *

1335             KK  SN11DA
1336             KM  2-8'x3' BOX CULVERTS TO TAKE FLOW TO WEST
1337             KM  THE WEST + EAST DETENTION BASIN WERE COMBINED WITH 1-18"RCP TO SOUTH
1338             RS       1    STOR       0
1339             SV     0.0     .06    0.16    0.35    1.91    5.62   10.58   16.46
1340             SE    1257    1258    1259    1260    1261    1262    1263    1264
1341             SQ       0       5       9      50      84     113     140     205
                 *

1342             KK  N11DAW
1343             KM  SPLIT THE FLOW BETWEEN BOX AND PIPE - Pipe Flow to South
1344             DT  D11DAS
1345             DI       0       5       9      50      84     113     140     205
1346             DQ       0       5       9      15      18      20      22      23
                 *
1                                                HEC-1 INPUT                                                    PAGE 41

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

1347             KK  RN11DA
1348             KM  ROUTE FLOW WEST TO CN11FB FROM N11DA
1349             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1350             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1351             KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1352             RS       5    FLOW       0
1353             RC     .03     .03     .03    2000    .001
1354             RX       0       6      18      30      35      41      47      50
1355             RY       5       4       2       0       0       2       4       5
                 *

1356             KK   N11FB   BASIN
1357             KM  SUB-BASIN N11FB
1358             BA   0.121
1359             LG    0.24    0.26    4.40    0.45      30
1360             UC   0.945   0.910
1361             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1362             UA     100
                 *

1363             KK  LN11FB
1364             KM  STORAGE ROUTING LN11FB
1365             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1366             DT  LN1FBD    10.6
1367             DI       0     100    1000   10000
1368             DQ       0     100    1000   10000
                 *

1369             KK  CN11FB
1370             KM  COMBINE LN11FB and RN11DA
1371             HC       2
                 *
```



```
1372             KK  C98RGL
1373             KM  COMBINE CN11FB AND RN11G AT WEST 98TH AVE AND RGL
1374             HC       2
                 *

1375             KK  RN11FB
1376             KM  ROUTE FLOW WEST TO CN11FA FROM CN11FB
1377             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1378             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1379             KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1380             RS       2    FLOW       0
1381             RC     .03     .03     .03    1100    .001
1382             RX       0      12      24      36      62      68      72      80
1383             RY       8       4       2       0       0       2       4       8
                 *
1                                                HEC-1 INPUT                                                    PAGE 42

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

1384             KK  DRA09K
1385             KM  DIVERSION RECOVER DA09K
1386             KM  RECOVER DIVERTED FLOW FROM A09K
1387             DR   A09KI
                 *

1388             KK  RA09KS
1389             KM  ROUTE FLOW SOUTH TO CN11FA
1390             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1391             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1392             KM  ADJACENT TO THE COMMERCIAL PROPERTY ON THE EAST SIDE
1393             RS       5    FLOW       0
1394             RC     .03     .03     .03    2700    .002
1395             RX       0      12      24      26      52      58      64      70
1396             RY       6       4       2       0       0       2       4       6
                 *

1397             KK   N11FA   BASIN
1398             BA   0.180
1399             LG    0.22    0.26    4.40    0.46      34
1400             UC   0.925   0.755
1401             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1402             UA     100
                 *

1403             KK  LN11FA
1404             KM  STORAGE ROUTING LN11FA
1405             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1406             DT  LN1FAD     7.7
1407             DI       0     100    1000   10000
1408             DQ       0     100    1000   10000
                 *

1409             KK   A09GA   BASIN
1410             BA   0.074
1411             LG    0.10    0.25    4.35    0.56      80
1412             UC   0.346   0.202
1413             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1414             UA     100
                 *

1415             KK  LA09GA
1416             KM  STORAGE ROUTING LA09GA
1417             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
```

```
1418          DT  L09GAD     5.9
1419          DI       0     100    1000   10000
1420          DQ       0     100    1000   10000
              *
1                                   HEC-1 INPUT                                                    PAGE 43

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

1421          KK  CN11FA
1422          KM  COMBINE RA09KS,LN11FA,LA09GA AND RN11FB
1423          HC       4
              *

1424          KK  RN11FA
1425          KM  ROUTE FLOW WEST TO CA09G FROM CN11FA
1426          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1427          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1428          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1429          RS       2    FLOW       0
1430          RC     .03      .03     .03     800    .001
1431          RX       0        6      12      18      52      58      64      70
1432          RY       8        4       2       0       0       2       4       8
              *

1433          KK   A09GB   BASIN
1434          KM  SUB-BASIN A09GB
1435          BA   0.051
1436          LG    0.23    0.25    4.30    0.49      35
1437          UC   1.497   1.958
1438          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1439          UA     100
              *

1440          KK  LA09GB
1441          KM  STORAGE ROUTING LA09GB
1442          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1443          DT  L09GBD     2.8
1444          DI       0     100    1000   10000
1445          DQ       0     100    1000   10000
              *

1446          KK   CA09G
1447          KM  COMBINE CA09GA and A09GB
1448          HC       2
              *
              * DIVERSION TO SOUTH ALONG 101ST AVE, MAXIMUM 150 CFS PER CITY

1449          KK   DA09G
1450          DT   A09GI
1451          DI       0      50     100     300     750    1200    2000
1452          DQ       0      10      20      60     150     150     150
              *

1453          KK  RA09GW
1454          KM  ROUTE FLOW WEST TO CX8 FROM CA09G
1455          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1456          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1457          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1458          RS       1    FLOW       0
1459          RC     .03      .03     .03     900    .001
1460          RX       0        6      12      18      52      58      64      70
1461          RY       8        4       2       0       0       2       4       8
              *
```



```
              * *** COMBINE  RX7S AND RA09GW ***********************************************
              *
1                                   HEC-1 INPUT                                                    PAGE 44

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

1462          KK     CX8
1463          HC       2
              *
              * ROUTE RX8W IS 2300 FT WITH A SLOPE OF .001
              * CROSS SECTION IS THE NEW CHANNEL ALONG ROSE GARDEN LANE
              *

1464          KK    RX8W
1465          KM  ROUTE FLOW WEST TO CA09H1 FROM CX8
1466          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1467          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1468          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1469          RS       4    FLOW       0
1470          RC     .03      .03     .03    2300    .001
1471          RX       0       12      24      36      62      68      74      80
1472          RY       8        4       2       0       0       2       4       8
              *

1473          KK    A09H   BASIN
1474          KM  SUB-BASIN A09H
1475          BA   0.237
1476          LG    0.24    0.25    4.55    0.41      31
1477          UC   1.196   1.050
1478          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1479          UA     100
              *

1480          KK   LA09H
1481          KM  STORAGE ROUTING LA09H
1482          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1483          DT  LA09HD    12.6
1484          DI       0     100    1000   10000
1485          DQ       0     100    1000   10000
              *

1486          KK  CA09H1
1487          KM  Combine flows from CX8 and A09H
1488          HC       2
              *

1489          KK    A09J   BASIN
1490          KM  SUB-BASIN A09J
1491          BA   0.168
1492          LG    0.25    0.25    4.35    0.46      30
1493          UC   0.956   0.839
1494          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1495          UA     100
              *
              * *** STORAGE ROUTING LA09J ***********************************************
              * *** FUTURE DEVELOPMENT STORAGE (ACCOUNTED) ****************************
              *
1                                   HEC-1 INPUT                                                    PAGE 45

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

1496          KK   LA09J
```

```
1497        DT  LA09JD     7.7
1498        DI       0     100    1000   10000
1499        DQ       0     100    1000   10000
            *
            * *** DIVERSION DA09J ***********************************************************
            * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ****************************
            * 100% Flows to South based on the report

1500        KK   DA09J
1501        DT   A09JI
1502        DI       0      10      30      50     100     500    1000    2000
1503        DQ       0       0       0       0       0       0       0       0
            *
            * *** ROUTE FLOW TO CA09H   *************************
            *

1504        KK  RA09JS
1505        RS      12    FLOW       0
1506        RC     .04     .04     .04    2800  .00350
1507        RX       0     100     200     225     245     270     370     470
1508        RY       8       7       6       0       0       6       7       8
            *

1509        KK   CA09H
1510        KM  COMBINE CA09H1 and RA09JS
1511        HC       2
            *
            * ROUTE FLOW TO CX10 FROM CA09H
            *

1512        KK   RA09H
1513        RS       1    FLOW       0
1514        RC     .03     .03     .03     850    .005
1515        RX     100     118     126     150     200     224     232     250
1516        RY      10       8       6       0       0       6       8      10
            *
            * *** RECOVER DIVERTED FLOW FROM A09QI*****************************************
            *

1517        KK  BA09QI
1518        DR   A09QI
            *
            * *** ROUTE RA09QS ***********************************************************
            *
            * ROUTE RA09QS IS 1655 FT WITH A SLOPE OF .0073
            * CROSS SECTION IS A MEDIUM NATURAL WASH
            * *** ROUTE FLOW TO CA09M FROM CA09Q  *************************
            *
```



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

1519        KK  RA09QS
1520        RS       6    FLOW       0
1521        RC    0.05     .06     .05    1655  0.0073
1522        RX       0      50     250     350     360     420     620     720
1523        RY      10       8       6       2       0       6       8      10
            *

1524        KK    A09M   BASIN
1525        KM  SUB-BASIN A09M
1526        BA   0.249
1527        LG    0.28    0.28    4.45    0.42      22
```



```
1528        UC   0.935   0.728
1529        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1530        UA     100
            *
            * *** STORAGE ROUTING LA09M ***********************************************
            * *** IRONWOOD RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) ***************
            *

1531        KK   LA09M
1532        DT  LA09MD     6.9
1533        DI       0     100    1000   10000
1534        DQ       0     100    1000   10000
            *
            * *** COMBINE  CA09Q AND A09M ****************************************************
            *

1535        KK   CA09M
1536        HC       2
            *
            * ROUTE RA09M IS 1102 FT WITH A SLOPE OF .0064
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09N FROM CA09M  *************************
            *

1537        KK   RA09M
1538        RS       2    FLOW       0
1539        RC    0.05    0.04     .05    1102  0.0064
1540        RX       0       1      21      41      51      71     101     102
1541        RY      10       4       0       4       5       6       6      10
            *

1542        KK    A09N   BASIN
1543        KM  SUB-BASIN A09N
1544        BA   0.110
1545        LG    0.27    0.27    5.80    0.22      25
1546        UC   0.834   0.679
1547        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1548        UA     100
            *
            * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
            *
```



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

1549        KK   CA09N
1550        HC       2
            *
            * *** STORAGE ROUTING LA09N ***********************************************
            * *** ALTA VISTA RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) **************
            *

1551        KK   LA09N
1552        RS       1    STOR       0
1553        SV     0.0    2.30    4.67    7.11    9.63   12.23   14.90   17.65   20.48
1554        SE  1250.0  1250.5  1251.0  1251.5  1252.0  1252.5  1253.0  1253.5  1254.0
1555        SQ       0     9.3    31.4    66.0   114.1   160.1   226.2   208.5   475.0
            *
            * CROSS SECTION IS A CHANNEL (MEASURED)
            * *** ROUTE FLOW TO CA09L FROM CA09N  *************************
            *

1556        KK   RA09N
```

```
1557        RS      15    FLOW       0
1558        RC   0.025    0.02   0.025    2382  0.0040
1559        RX       0       1       7      11      17      21      29     100
1560        RY       5       4       2       0       0       2     3.0       5
            *
            * *** RECOVER DIVERTED FLOW FROM CA09J ****************************************
            *

1561        KK  DRA09J
1562        DR   A09JI
            *
            * ROUTE RA09JW IS 1749 FT WITH A SLOPE OF .0063
            * CROSS SECTION IS A CHANNEL ON THE WEST SIDE OF A ROAD
            * *** ROUTE FLOW TO CA09L FROM CA09J  *************************
            *

1563        KK  RA09JW
1564        RS       1    FLOW       0
1565        RC    0.04    0.03    0.04    1749  0.0063
1566        RX       0       1      21      31      41      51      81     281
1567        RY      14       6       6       0       0       6       6       8
            *

1568        KK    A09L   BASIN
1569        KM  SUB-BASIN A09L
1570        BA   0.136
1571        LG    0.23    0.26    4.90    0.32      26
1572        UC   0.978   0.827
1573        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1574        UA     100
            *
            * *** COMBINE BASIN A09L, RA09N, AND RA09JW   **********************************
            *
```



```
1 HEC-1 INPUT                                                                    PAGE 48

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

1575        KK   CA09L
1576        HC       3
            *
            * LA09L is an Onlin Detention Basin, NOT Retention Basin
            *

1577        KK   LA09L
1578        RS       1    STOR       0
1579        SV     0.0    0.57    1.17    1.82    2.50    3.22    3.98    4.78    5.63    6.52
1580        SE     0.0     0.5     1.0     1.5     2.0     2.5     3.0     3.5     4.0     5.5
1581        SQ       0    10.0    30.0    52.0    80.0   110.0   140.0   155.0   180.0     600
            *
            * ROUTE RA09LS IS 2615 FT WITH A SLOPE OF .0019
            * CROSS SECTION IS A NEW CHANNEL ALONG THE EAST SIDE OF THE ROAD
            * *** ROUTE FLOW TO CA99W FROM CA09L  *************************
            *

1582        KK  RA09LS
1583        RS       3    FLOW       0
1584        RC   0.025     .02   0.025    2615  0.0040
1585        RX       0       1       6      12      19      25      29     100
1586        RY       6       5       4       0       0       4       5       6
            *

1587        KK   A09IH   BASIN
1588        KM   Subbasin for Rose Garden and Desert Star Areas
```



```
1589        KM   SUB-BASIN A09IH
1590        BA   0.091
1591        LG    0.25    0.26    4.60    0.39      27
1592        UC   0.770   0.750
1593        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1594        UA     100
            *
            * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
            *

1595        KK  CA09IH
1596        HC       2
            *
            * Onlin Detention Basin (Box Culvert Outlet)
            *

1597        KK  LA09IH
1598        RS       1    STOR       0
1599        SV     0.0    1.12    2.29    3.52    4.79    6.12    7.51    8.95   10.45   12.01
1600        SE  1237.0  1237.5  1238.0  1238.5  1239.0  1239.5  1240.0  1240.5  1241.0  1242.5
1601        SQ       0    10.0    30.0    52.0    80.0   112.0   145.0   183.0   220.0   600.0
            *
```



```
1 HEC-1 INPUT                                                                    PAGE 49

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

1602        KK    A09I   BASIN
1603        KM  SUB-BASIN A09I
1604        BA   0.126
1605        LG    0.25    0.20    6.60    0.17      29
1606        UC   0.977   0.913
1607        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1608        UA     100
            *
            * *** ROSE GARDEN RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED)  ************
            *

1609        KK   LA09I
1610        DT  LA09ID     5.4
1611        DI       0     100    1000   10000
1612        DQ       0     100    1000   10000
            *
            * *** COMBINE  RA09IW AND RA09LS ***********************************************
            *

1613        KK    CX10
1614        HC       3
            *
            * ROUTE FLOW TO CA09F FROM CA09G
            *

1615        KK    RX10
1616        RS       5    FLOW       0
1617        RC    0.03    0.03    0.03    4470    .005
1618        RX     100     118     126     150     200     224     232     250
1619        RY      10       8       6       0       0       6       8      10
            *

1620        KK    A99V   BASIN
1621        KM  SUB-BASIN A99V
1622        BA   0.207
1623        LG    0.35    0.40    6.00    0.18       1
1624        UC   0.824   0.601
```

```
1625    UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1626    UA     100
        *
        * *** COMBINE BASIN A99V AND RX11W  ************************************
        *

1627    KK   CA99V
1628    HC       2
        *

1629    KK     A10   BASIN
1630    KM  SUB-BASIN A10
1631    BA   0.214
1632    LG    0.34    0.34    4.65    0.33       2
1633    UC   0.639   0.311
1634    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1635    UA     100
        *
        *
```



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

1636    KK    A99W   BASIN
1637    KM  SUB-BASIN A99W
1638    BA   0.215
1639    LG    0.27    0.29    6.40    0.17      20
1640    UC   1.104   0.685
1641    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1642    UA     100
        *
        * *** STORAGE ROUTING LA99W ***********************************************
        * *** DEER VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
        *

1643    KK   LA99W
1644    DT  LA99WD     6.7
1645    DI       0     100    1000   10000
1646    DQ       0     100    1000   10000
        *
        * Dummy Combination at AFR and Rose Garden Lane.
        *

1647    KK    AFR3
1648    HC       4
        *
        * *** RECOVER DIVERTED FLOW FROM CA09G ***************************************
        *

1649    KK  DRA09G
1650    DR   A09GI
        *
        * ROUTE RA09GS IS 3990 FT WITH A SLOPE OF .0015
        * CROSS SECTION IS A MEDIUM ROADSIDE CHANNEL
        * ROUTE FLOW TO CA09F FROM CA09G
        *

1651    KK  RA09GS
1652    RS      13    FLOW       0
1653    RC    0.04    0.04    0.04    3990   .0015
1654    RX       0     200     220     240     260     280     320     520
1655    RY       6       4       0       0       3       4       4       6
        *
```



```
1656    KK    A09F   BASIN
1657    KM  SUB-BASIN A09F
1658    BA   0.365
1659    LG    0.21    0.27    5.30    0.28      35
1660    UC   1.036   0.628
1661    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1662    UA     100
        *
        * *** STORAGE ROUTING LA09F ***********************************************
        * *** PARKRIDGE ESTATES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ***************
        *
```



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

1663    KK   LA09F
1664    DT  LA09FD    13.6
1665    DI       0     100    1000   10000
1666    DQ       0     100    1000   10000
        *
        * *** COMBINE  CA09G, CA09H, AND A09F ****************************************
        *

1667    KK   CA09F
1668    HC       2
        *
        * *** DIVERTED  MAIN (WEST), DIVERTED (SOUTH)  ***************************
        * BEARDSLEY ROAD CHANNEL TO THE WEST. EXCESS FLOW TO THE SOUTH.
        *

1669    KK   DA09F
1670    DT   A09FI
1671    DI       0      10      30      50     100     500     700    1000
1672    DQ       0      .2      .3      .4      .5      80     250     500
        *
        * ******************************************************************************
        * *********************    BEARDSLEY RD DRAINAGE    ******************************
        * ******************************************************************************
        *
        * ROUTE RA09FW IS 3031 FT WITH A SLOPE OF .002
        * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
        *
        * *** ROUTE FLOW TO CA09E FROM CA09F  *************************
        *

1673    KK  RA09FW
1674    RS       9    FLOW       0
1675    RC     .03    .025     .03    3031   0.002
1676    RX       0       1      16      36      51     123     148     648
1677    RY      16       8       0       0       8       8       9      11
        *

1678    KK    A09E   BASIN
1679    KM  SUB-BASIN A09E
1680    BA   0.147
1681    LG    0.22    0.24    4.70    0.35      34
1682    UC   0.968   0.908
1683    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1684    UA     100
        *
        * *** STORAGE ROUTING LA09E ***********************************************
        * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ******************
```

```
                    *
1                                   HEC-1 INPUT                                                    PAGE 52

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

1685          KK   LA09E
1686          DT  LA09ED     8.2
1687          DI       0     100    1000   10000
1688          DQ       0     100    1000   10000
              *
              * *** COMBINE LA09E AND A99E ***************************************
              *

1689          KK   CA09E
1690          HC       2
              *
              * ROUTE RA09E IS 2700 FT WITH A SLOPE OF .0041
              * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
              *
              * ROUTE FLOW TO CA09C FROM CA09E
              *

1691          KK   RA09E
1692          RS       3    FLOW      0
1693          RC    0.04    0.03    0.04    2700   .0041
1694          RX       0       1      16      36      51     123     148     648
1695          RY      16       8       0       0       8       8       9      11
              *

1696          KK    A09D   BASIN
1697          KM  SUB-BASIN A09D
1698          BA   0.254
1699          LG    0.23    0.20    6.60    0.16      31
1700          UC   0.604   0.239
1701          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1702          UA     100
              *
              * *** STORAGE ROUTING LA09D ***********************************************
              * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
              *

1703          KK   LA09D
1704          DT  LA09DD    15.3
1705          DI       0     100    1000   10000
1706          DQ       0     100    1000   10000
              *
              * *** COMBINE LA09D, AND RA09EW ************************
              *

1707          KK  CA09C*
1708          HC       2
              *
              * ROUTE RA09C* IS 841 FT WITH A SLOPE OF .0083
              * CROSS SECTION IS BEARDSLEY ROAD CHANNEL (MEASURED)
              * *** ROUTE FLOW TO CA09C FROM CA09C*   **************************
              *
1                                   HEC-1 INPUT                                                    PAGE 53

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

1709          KK  RA09C*
1710          RS       1    FLOW      0
```



```
1711          RC    0.04    0.03    0.04     841   .0083
1712          RX       0      51      61      71      81     111     151     651
1713          RY       9       8       0       0       8       9       9      10
              *

1714          KK    A09C   BASIN
1715          KM  SUB-BASIN A09C
1716          BA   0.073
1717          LG    0.35    0.32    4.50    0.38       4
1718          UC   0.789   0.749
1719          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1720          UA     100
              *
              * *** COMBINE BASIN A09C AND RA09C*   ***********************************
              *

1721          KK   CA09C
1722          HC       2
              *
              * ROUTE RA09C IS 1978 FT WITH A SLOPE OF .0056
              * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
              *

1723          KK   RA09C
1724          RS       3    FLOW     -1
1725          RC    0.04    0.04    0.04    1978  0.0056
1726          RX       0     100     120     130     150     180     205     705
1727          RY      14       8       0       0       8       8       9      10
              *

1728          KK    A09B   BASIN
1729          KM  SUB-BASIN A09B
1730          BA   0.041
1731          LG    0.12    0.25    4.10    0.68      71
1732          UC   0.268   0.175
1733          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1734          UA     100
              *
              * ROUTE RA09B IS 2497 FT WITH A SLOPE OF .0012
              * CROSS SECTION IS A SMALL NATURAL CHANNEL
              * *** ROUTE FLOW TO CA09A FROM CA09B  **************************
              *

1735          KK   RA09B
1736          RS      14    FLOW      0
1737          RC    0.05     .06     .05    2497   .0012
1738          RX       0     350     450     480     482     510     610     910
1739          RY       7       6       5       1       0       5       6       7
              *
1                                   HEC-1 INPUT                                                    PAGE 54

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

1740          KK    A09A   BASIN
1741          KM  SUB-BASIN A09A
1742          BA   0.084
1743          LG    0.29    0.15    3.74    0.80      38
1744          UC   1.036   0.950
1745          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1746          UA     100
              *
              * *** Combine  CA09C, A09B, AND A09A ******************************************
              *
```

```
1747          KK   CA09A
1748          HC       3
              *
              * THIS FLOW IS DIVERTED. THERE IS TWO 36" CMP THAT CARRIES
              * FLOW TO THE WEST, AND THE REST FLOWS SOUTH.
              *

1749          KK  DA09AO
1750          DT   A09AI
1751          DI       0      70     140     400     600     800    1000    3000    5000
1752          DQ       0     0.2     0.3     260     460     660     860    2860    4860
              *
              * ROUTE RA09AW IS 5898 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A LARGE NATURAL WASH
              * *** ROUTE THE DIVERTED FLOW TO THE WEST AND SOUTH TO CA09 ********************
              *

1753          KK  RA09AW
1754          RS      15    FLOW       0
1755          RC    0.05     .06     .05    5898  0.0017
1756          RX       0      50     250     310     360     420     620     720
1757          RY      10       8       6       0       0       6       8      10
              *

1758          KK    A99T   BASIN
1759          KM  SUB-BASIN A99T
1760          BA   0.030
1761          LG    0.20    0.30    2.79    1.39      42
1762          UC   0.262   0.074
1763          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1764          UA     100
              *
              * *** STORAGE ROUTING LA99T ***********************************************
              * *** GRAVEL PIT STORAGE (ACCOUNTED) ***************************************
              *

1765          KK   LA99T
1766          DT  LA99TD    0.64
1767          DI       0     100    1000   10000
1768          DQ       0     100    1000   10000
              *
              * ROUTE RA99T IS 886 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS A MEDIUM NATURAL WASH
              * *** ROUTE FLOW TO CA09 FROM CA99T   **************************
              *
1                                    HEC-1 INPUT                                          PAGE 55

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

1769          KK   RA99T
1770          RS       5    FLOW       0
1771          RC    0.05     .06     .05     886  0.0023
1772          RX       0      50     250     350     360     420     620     720
1773          RY      10       8       6       2       0       6       8      10
              *

1774          KK     A09   BASIN
1775          KM  SUB-BASIN A09
1776          BA   0.176
1777          LG    0.24    0.31    3.58    0.68      22
1778          UC   0.750   0.320
1779          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1780          UA     100
              *
              * COMBINE RA99T, CA09, AND RA09AW
              *

1781          KK    CA09
1782          HC       3
              *

1783          KK    A99U   BASIN
1784          KM  SUB-BASIN A99U
1785          BA   0.070
1786          LG    0.25    0.30    3.71    0.66      29
1787          UC   0.605   0.615
1788          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1789          UA     100
              *
              * COMBINE CA09, A99U, AND AFR3 at AFR & South of Beardsley Rd.
              *

1790          KK    AFR4
1791          HC       3
              *

1792          KK    A99S   BASIN
1793          KM  SUB-BASIN A99S
1794          BA   0.077
1795          LG    0.35    0.35    3.64    0.59       0
1796          UC   1.214   1.245
1797          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1798          UA     100
              *

1799          KK    A08A   BASIN
1800          KM  SUB-BASIN A08A
1801          BA   0.138
1802          LG    0.20    0.30    3.31    0.77      18
1803          UC   1.383   1.534
1804          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1805          UA     100
              *
              * ROUTE RA08A IS 1747 FT WITH A SLOPE OF .0057
              * CROSS SECTION IS A SMALL NATURAL WASH
              * *** ROUTE FLOW TO CA08 FROM CA08A  ***************************
              *
1                                    HEC-1 INPUT                                          PAGE 56

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

1806          KK   RA08A
1807          RS       5    FLOW       0
1808          RC    0.05     0.05    0.05    1747  0.0057
1809          RX       0      350     450     480     482     510     610     910
1810          RY       7        6       5       1       0       5       6       7
              *

1811          KK    A99R   BASIN
1812          KM  SUB-BASIN A99R
1813          BA   0.037
1814          LG    0.31    0.31    3.55    0.66      12
1815          UC   0.546   0.328
1816          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1817          UA     100
```

```
                    *
                    * ROUTE RA99R IS 2159 FT WITH A SLOPE OF .0032
                    * CROSS SECTION IS A SMALL NATURAL WASH
                    * *** ROUTE FLOW TO CA08 FROM CA99R  ***************************
                    *

1818                KK   RA99R
1819                RS       9    FLOW       0
1820                RC    0.05    0.05    0.05    2159   .0032
1821                RX       0     350     450     480     482     510     610     910
1822                RY       7       6       5       1       0       5       6       7
                    *

1823                KK     A08   BASIN
1824                KM  SUB-BASIN A08
1825                BA   0.077
1826                LG    0.30    0.31    3.19    0.88      14
1827                UC   0.417   0.103
1828                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1829                UA     100
                    *
                    * *** COMBINE A99S, A08, RA99R AND RA08A   ******************
                    *

1830                KK    CA08
1831                HC       4
                    *
                    * *** COMBINE HYDROGRAPHS OF CA08 AND AFR4 at AFR and South of Union Hills Dr.
                    *

1832                KK    AFR5
1833                HC       2
                    *
                    * KK  A07G   BASIN
                    * KMSUB-BASIN A07G
                    * BA 0.258
                    * LG  0.24    0.16    7.60    0.11      32
                    * UC 0.798   0.543
                    * UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97
                    * UA   100
                    *
1                                                HEC-1 INPUT                                          PAGE 57

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

1834                KK  A07G.1   BASIN
1835                KM  SUB-BASIN A07G.1
1836                BA   0.233
1837                LG    0.24    0.15    8.00    0.10      33
1838                UC   0.619   0.433
1839                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1840                UA     100
                    *
                    * *** STORAGE ROUTING LA07G ***********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
                    *

1841                KK   LA07G
1842                DT  LA07GD    12.9
1843                DI       0     100    1000   10000
1844                DQ       0     100    1000   10000
                    *
                    * ROUTE RA07G IS 2439 FT WITH A SLOPE OF .0012
```



```
                    * CROSS SECTION IS 111TH AVE (MEASURED)
                    * *** ROUTE FLOW FROM CA07G TO CA07E ***********************************
                    *

1845                KK   RA07G
1846                RS       9    FLOW       0
1847                RC    0.04     .02    0.04    2439  0.0012
1848                RX       0       1      26      41      71      86     126     576
1849                RY      12       7       5       1       1       5       6       7
                    *
                    * KK  A07F   BASIN
                    * KMSUB-BASIN A07F
                    * BA 0.233
                    * LG  0.21    0.27    4.90    0.32      26
                    * UC 1.220   1.192
                    * UA     0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95
                    * UA   100
                    *
                    *

1850                KK  A07F.1   BASIN
1851                KM  SUB-BASIN A07F.1
1852                BA   0.133
1853                LG    0.25    0.25    4.80    0.35      30
1854                UC   1.064   1.410
1855                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1856                UA     100
                    *

1857                KK  A07F.2   BASIN
1858                KM  SUB-BASIN A07F.2
1859                BA   0.074
1860                LG    0.14    0.32    4.70    0.29       8
1861                UC   0.800   1.170
1862                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1863                UA     100
                    *
                    * ROUTE RA07F IS 2619 FT WITH A SLOPE OF .0042
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07F TO CA07E ***********************************
                    *
                    * KK RA07F
                    * RS       5    FLOW       0
                    * RC    0.03    0.02    0.03    2619  0.0042
                    * RX       0       1      13      23      53      83     108     109
                    * RY      14       6       0       0       6       6       7      15
                    *
                    * KK  A07E   BASIN
                    * KMSUB-BASIN A07E
                    * BA 0.227
                    * LG  0.23    0.15    7.60    0.11      49
                    * UC 0.696   0.433
                    * UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97
                    * UA   100
                    *
                    *
1                                                HEC-1 INPUT                                          PAGE 58

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

1864                KK  A07E.8   BASIN
1865                KM  SUB-BASIN A07E.8
1866                BA   0.006
```

```
1867    LG    0.14    0.25    4.80    0.40      66
1868    UC   0.214   0.241
1869    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1870    UA     100
        *
        * *** COMBINE BASINS A07E.8, A07F.1, AND A07F.2  ***************************
        *

1871    KK   CA07F
1872    HC       3
        *
        * ROUTE RA07F IS 800 FT WITH A SLOPE OF .0042
        * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
        * *** ROUTE FLOW FROM CA07F TO CA07E.7 ***********************************
        *

1873    KK   RA07F
1874    RS       2    FLOW       0
1875    RC    0.03    0.02    0.03     800  0.0042
1876    RX       0       1      13      23      53      83     108     109
1877    RY      14       6       0       0       6       6       7      15
        *

1878    KK  A07E.7   BASIN
1879    KM  SUB-BASIN A07E.7
1880    BA   0.006
1881    LG    0.14    0.25    5.80    0.26      67
1882    UC   0.153   0.134
1883    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1884    UA     100
        *
        * *** COMBINE BASIN A07E.7 AND RA07F  ***************************
        *

1885    KK  CA07E7
1886    HC       2
        *
        * ROUTE RA07E7 IS 1820 FT WITH A SLOPE OF .0042
        * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
        * *** ROUTE FLOW FROM CA07E7 TO CA07E4 ***********************************
        *

1887    KK  RA07E7
1888    RS       4    FLOW       0
1889    RC    0.03    0.02    0.03    1820  0.0042
1890    RX       0       1      13      23      53      83     108     109
1891    RY      14       6       0       0       6       6       7      15
        *
```



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

1892    KK  A07G.2   BASIN
1893    KM  SUB-BASIN A07G.2
1894    BA   0.028
1895    LG    0.27    0.27    4.70    0.35      24
1896    UC   0.718   1.254
1897    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1898    UA     100
        *
        * ROUTE RA07G2 IS 1400 FT WITH A SLOPE OF .0107
        * CROSS SECTION IS DINERO ROAD (MEASURED)
        * *** ROUTE FLOW FROM A07G2 TO CA07E3 ***********************************
```



```
        *

1899    KK  RA07G2
1900    RS       6    FLOW       0
1901    RC    0.03    0.02    0.03    1400  0.0107
1902    RX       0      10      20      30      40      50      60      70
1903    RY       2       1       0       0       0       0       1       2
        *

1904    KK  A07E.3   BASIN
1905    KM  SUB-BASIN A07E.3
1906    BA   0.062
1907    LG    0.25    0.19    6.60    0.17      31
1908    UC   0.400   0.282
1909    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1910    UA     100
        *
        * *** COMBINE BASIN A07E.3 AND RA07G2  ***************************
        *

1911    KK  CA07E3
1912    HC       2
        *

1913    KK  DI7E.3
1914    DT  DI7E.3     0.1
1915    DI       0     100    1000   10000
1916    DQ       0     100    1000   10000
        *
        * ROUTE RA07E3 IS 1650 FT WITH A SLOPE OF .0048
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM CA07E3 TO CA07E4 ***********************************
        *

1917    KK  RA07E3
1918    RS       4    FLOW       0
1919    RC    0.03    0.02    0.03    1650  0.0048
1920    RX       0      10      20      30      40      50      60      70
1921    RY       2       1       0       0       0       0       1       2
        *
```



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

1922    KK  A07E.2   BASIN
1923    KM  SUB-BASIN A07E.2
1924    BA   0.025
1925    LG    0.24    0.26    5.40    0.26      29
1926    UC   0.405   0.436
1927    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1928    UA     100
        *

1929    KK  DI7E.2
1930    DT  DI7E.2    0.04
1931    DI       0     100    1000   10000
1932    DQ       0     100    1000   10000
        *
        * ROUTE RA07E2 IS 1700 FT WITH A SLOPE OF .0004
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM CA07E2 TO CA07E4 ***********************************
        *
```

```
1933          KK  RA07E2
1934          RS      12    FLOW       0
1935          RC    0.03    0.02    0.03    1700  0.0004
1936          RX       0      10      20      30      40      50      60      70
1937          RY       2       1       0       0       0       0       1       2
              *

1938          KK  A07E.1   BASIN
1939          KM  SUB-BASIN A07E.1
1940          BA   0.037
1941          LG    0.25    0.15    8.00    0.10      60
1942          UC   0.518   0.539
1943          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1944          UA     100
              *

1945          KK  DI7E.1
1946          DT  DI7E.1     1.4
1947          DI       0     100    1000   10000
1948          DQ       0     100    1000   10000
              *
              * ROUTE RA07E1 IS 1200 FT WITH A SLOPE OF .0025
              * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
              * *** ROUTE FLOW FROM CA07E1 TO CA07E4 ***********************************
              *

1949          KK  RA07E1
1950          RS       5    FLOW       0
1951          RC    0.03    0.02    0.03    1200  0.0025
1952          RX       0      10      20      30      40      50      60      70
1953          RY       2       1       0       0       0       0       1       2
              *
```



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

1954          KK  A07E.6   BASIN
1955          KM  SUB-BASIN A07E.6
1956          BA   0.020
1957          LG    0.12    0.15    7.60    0.13      74
1958          UC   0.188   0.130
1959          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1960          UA     100
              *

1961          KK  DI7E.6
1962          DT  DI7E.6    0.12
1963          DI       0     100    1000   10000
1964          DQ       0     100    1000   10000
              *
              * ROUTE RA07E6 IS 1400 FT WITH A SLOPE OF .0057
              * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
              * *** ROUTE FLOW FROM A07E6 TO CA07E5 ************************************
              *

1965          KK  RA07E6
1966          RS       4    FLOW       0
1967          RC    0.03    0.02    0.03    1400  0.0057
1968          RX       0      10      20      30      40      50      60      70
1969          RY       2       1       0       0       0       0       1       2
              *

1970          KK  A07E.5   BASIN
```



```
1971          KM  SUB-BASIN A07E.5
1972          BA   0.035
1973          LG    0.23    0.15    8.40    0.09      57
1974          UC   0.383   0.320
1975          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1976          UA     100
              *
              * *** COMBINE BASIN A07E.5 AND RA07E6  ***************************
              *

1977          KK  CA07E5
1978          HC       2
              *
              * ROUTE RA07E5 IS 900 FT WITH A SLOPE OF .0033
              * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
              * *** ROUTE FLOW FROM CA07E5 TO CA07E4 ************************************
              *

1979          KK  RA07E5
1980          RS       2    FLOW       0
1981          RC    0.03    0.02    0.03     900  0.0033
1982          RX       0      10      20      30      40      50      60      70
1983          RY       2       1       0       0       0       0       1       2
              *
```



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

1984          KK  A07E.4   BASIN
1985          KM  SUB-BASIN A07E.4
1986          BA   0.057
1987          LG    0.23    0.16    8.00    0.10      57
1988          UC   0.467   0.359
1989          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1990          UA     100
              *
              * *** COMBINE BASIN A07E.4, RA07E1, RA07E2, RA07E3, AND RA07E5  *************
              *

1991          KK  CA07E4
1992          HC       5
              *

1993          KK  DI7E.4
1994          DT  DI7E.4     0.7
1995          DI       0     100    1000   10000
1996          DQ       0     100    1000   10000
              *
              * *** COMBINE CA07E4, AND RA07E7  *************
              *

1997          KK   CA07E
1998          HC       3
              *

1999          KK  DIA07E
2000          DT  DIA07E     2.8
2001          DI       0     100    1000   10000
2002          DQ       0     100    1000   10000
              *
              *
              * ROUTE RA07E IS 1771 FT WITH A SLOPE OF .004
              * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
```

```
                    * *** ROUTE FLOW FROM CA07E TO CA07C ***********************************
                    *

2003                KK   RA07E
2004                RS       4    FLOW       0
2005                RC    0.03    0.03    0.03    1771   0.004
2006                RX       0     100     112     122     134     154     189     689
2007                RY       8       6       0       0       6       7       7       9
                    *

2008                KK    A07C   BASIN
2009                KM  SUB-BASIN A07C
2010                BA   0.175
2011                LG    0.34    0.31    4.90    0.30       5
2012                UC   0.923   0.648
2013                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2014                UA     100
                    *
                    * *** COMBINE BASIN A07C AND RA07E *************************************
                    *
1                                                HEC-1 INPUT                                          PAGE 63

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

2015                KK   CA07C
2016                HC       2
                    *
                    * ROUTE RA07C IS 1051 FT WITH A SLOPE OF .0067
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07C TO CA07D ***********************************
                    *

2017                KK   RA07C
2018                RS       1    FLOW       0
2019                RC    0.03    0.03    0.03    1051  0.0067
2020                RX       0      50      62      72      84     104     139     640
2021                RY       9       6       0       0       6       7       7       9
                    *

2022                KK    A07H   BASIN
2023                KM  SUB-BASIN A07H
2024                BA   0.093
2025                LG    0.23    0.21    4.70    0.44      47
2026                UC   0.423   0.211
2027                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2028                UA     100
                    *
                    * ROUTE RA07H IS 2386 FT WITH A SLOPE OF .0461
                    * CROSS SECTION IS THE FARM FIELDS IN THE AGUA FRIA RIVER (MEASURED)
                    * *** ROUTE FLOW FROM CA07H TO CA07D ***********************************
                    *

2029                KK   RA07H
2030                RS       3    FLOW       0
2031                RC    0.03    0.03    0.03    2386  0.0461
2032                RX       0      14     125     250     500     800    1000    1014
2033                RY       7       0       0       0       0       0       0       7
                    *
                    * *** RECOVER DIVERTED FLOW FROM A09AI *************************************
                    *

2034                KK  DA09AI
2035                DR   A09AI
```



```
                    *

2036                KK  RA09AI
2037                RS      12    FLOW       0
2038                RC    0.03    0.03    0.03    3000   0.002
2039                RX       0      50     100     150     200     250     300     500
2040                RY       7       6       5       5       0       0       5       6
                    *

2041                KK    A08B   BASIN
2042                KM  SUB-BASIN A08B
2043                BA   0.099
2044                LG    0.19    0.27    3.74    0.66      35
2045                UC   0.769   0.536
2046                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1                                                HEC-1 INPUT                                          PAGE 64

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

2047                UA     100
                    *
                    * *** COMBINE BASIN A09AI AND R80BE ************************************
                    *

2048                KK   CA08B
2049                HC       2
                    *
                    * ROUTE RA08B IS 2925 FT WITH A SLOPE OF .001
                    * CROSS SECTION IS 115TH AVE (MEASURED)
                    * *** ROUTE FLOW FROM CA08B TO CA07D ***********************************
                    *

2050                KK   RA08B
2051                RS      12    FLOW       0
2052                RC    0.03    0.03    0.03    2925   0.001
2053                RX       0      50     100     150     200     250     300     500
2054                RY       7       6       5       5       0       0       5       6
                    *

2055                KK    A07D   BASIN
2056                KM  SUB-BASIN A07D
2057                BA   0.229
2058                LG    0.49    0.02    4.10    0.67       1
2059                UC   1.500   1.715
2060                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2061                UA     100
                    *
                    * *** COMBINE BASIN A07D, RA08B, RA07H, AND RA07C *********************
                    *

2062                KK   CA07D
2063                HC       4
                    *
                    * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
                    * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
                    *

2064                KK   RA07D
2065                RS      14    FLOW       0
2066                RC    0.03    0.03    0.03    4828  0.0017
2067                RX       0     100     112     147     159     179     214     580
2068                RY       8       6       0       0       6       7       7       9
                    *
```

```
2069          KK    S30D   BASIN
2070          KM  SUB-BASIN S30D
2071          BA   0.131
2072          LG   0.25    0.17    6.80    0.15      30
2073          UC   0.801   0.495
2074          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2075          UA     100
              *
              * ROUTE RS30D IS 6176 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS 99TH AVENUE
              * *** ROUTE S30D THROUGH S30C ****************************************
              *
1                                                HEC-1 INPUT                                                PAGE 65

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

2076          KK   RS30D
2077          RS      10    FLOW       0
2078          RC     .02     .02     .02    6176  0.0023
2079          RX       0       1      85      95     109     134     239     240
2080          RY      12       6       5       0       0       5       6      12
              *

2081          KK    S30C   BASIN
2082          KM  SUB-BASIN S30C
2083          BA   0.454
2084          LG   0.23    0.15    7.30    0.13      36
2085          UC   1.108   0.895
2086          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2087          UA     100
              *
              * RECOVER DIVERTED FLOW FROM A09FI
              *

2088          KK  DA09FI
2089          DR   A09FI
              *

2090          KK  RA09FI
2091          RS      10    FLOW       0
2092          RC     .02     .02     .02    7000  0.0023
2093          RX       0       1      85      95     109     134     239     240
2094          RY      12       6       5       0       0       5       6      12
              *

2095          KK     XX1
2096          HC       3
              *

2097          KK    S30B   BASIN
2098          KM  SUB-BASIN S30B
2099          BA   0.399
2100          LG   0.19    0.29    5.80    0.21      24
2101          UC   1.280   1.214
2102          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2103          UA     100
              *
              * *** COMBINE BASIN S30C, S30B, AND RS30D ******************************
              *

2104          KK   CS30B
2105          HC       2
              *
```



```
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **********************
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *
1                                                HEC-1 INPUT                                                PAGE 66

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

2106          KK  DS30BO
2107          DT  DS30BI
2108          DI       1     250     550     750    1000    1500    1750    2000
2109          DQ      .1      .2      .3     200     450     950    1200    1450
              *
              * ROUTE RS30BW IS 5060 FT WITH A SLOPE OF .0008
              * CROSS SECTION IS DEL WEBB BLVD
              * *** ROUTED S30BO THROUGH S30A ****************************************
              *

2110          KK  RS30BW
2111          RS       9    FLOW       0
2112          RC     .02    0.02     .02    5060  0.0008
2113          RX       0       1     100     120     140     155     239     240
2114          RY      12       6       5       0       0       5       6      12
              *

2115          KK    S30A   BASIN
2116          KM  SUB-BASIN S30A
2117          BA   0.531
2118          LG   0.22    0.21    6.40    0.21      28
2119          UC   1.281   0.883
2120          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2121          UA     100
              *
              * *** COMBINE BASIN S30A AND RS30B ****************************************
              *

2122          KK   CS30A
2123          HC       2
              *
              * ***********************************************************************
              * ***********************************************************************
              * ******** THE FOLLOWING PORTION WAS EXTRACTED FROM THE GLENDALE/PEORIA
              * ******** ADMPU MODEL CREATED BY ENTELLUS, DATED OCTOBER 21, 2000.
              * ******** FILE NAME: 10yr6hr.DAT
              * ***********************************************************************
              * ***********************************************************************
              *
              * *** DIVERSION DS30AO ***************************************************
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **************************
              *
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *
              * DDM   ***** Preserved *****

2124          KK  DS30AO
2125          DT  DS30AI
2126          DI       1     250     550     750    1000    1500    1750    2000
2127          DQ      .1      .2      .3     200     450     950    1200    1450
              *
              * *** ROUTE RS30AW  ******************************************************
              *
              * ROUTE RS30AW IS 4919 FT WITH A SLOPE OF .0043
```

```
                    * CROSS SECTION IS DEL WEBB BLVD
                    *
                    * *** ROUTE FLOW FROM CS30A TO CS30 ***********************************
                    *
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT                                                          PAGE 67
        LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        2128        KK  RS30AW
        2129        RS       5    FLOW       0
        2130        RC    0.03    0.02    0.03    4919  0.0043
        2131        RX       0       1     110     125     140     155     160     161
        2132        RY      15       7       7       0       0       7       7      15
                    *
                    *
                    * DDM   ***** Preserved *****

        2133        KK     S30   BASIN
        2134        KM   SUB-BASIN S30
        2135        KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
        2136        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
        2137        KM     L = 1.12  Kb = .040  Adj. Slope =   27.0
        2138        BA    .321
        2139        LG    0.22    0.26    4.55    0.43      27
        2140        UC   0.871   0.664
        2141        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
        2142        UA     100
                    *
                    * *** COMBINE BASIN S30 AND RS30A ***************************************
                    *
                    * DDM   ***** Preserved *****

        2143        KK    CS30
        2144        HC       2
                    *
                    * *** ROUTE RS30  ******************************************************
                    *
                    * ROUTE RS30 IS 691 FT WITH A SLOPE OF .0058
                    * CROSS SECTION IS A CHANNEL ALONG BELL RD (MEASURED)
                    *
                    * *** ROUTE FLOW FROM CS30 TO CA07B ***********************************
                    *
                    * DDM   ***** Preserved *****

        2145        KK    RS30
        2146        RS       1    FLOW       0
        2147        RC    0.03    0.02    0.03     691  0.0058
        2148        RX       0      26     136     197     212     227     242     742
        2149        RY       9       8       8       7       0       0       7       9
                    *

        2150        KK    A07B   BASIN
        2151        KM   SUB-BASIN A07B
        2152        KM   6-HOUR RAINFALL, PATTERN NO. 1.15 WAS USED TO FIND TC & R FOR THIS BASIN
        2153        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
        2154        KM     L = 1.58  Kb = .030  Adj. Slope =   41.0
        2155        BA    .649
        2156        LG    0.16    0.31    4.60    0.34      18
        2157        UC   0.808   0.539
        2158        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
        2159        UA     100
                    *
```



```
                    *
                    * *** STORAGE ROUTING LA07B ******************************************
                    * *** CANYON RIDGE WEST RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
                    * DDM   ***** Preserved *****
1                                                HEC-1 INPUT                                                          PAGE 68
        LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        2160        KK   LA07B
        2161        DT  LA07BD    19.2
        2162        DI       0     100    1000   10000
        2163        DQ       0     100    1000   10000
                    *
                    *
                    * *** COMBINE LA07B, RA07D, AND RS30  ********************************
                    *
                    * DDM   ***** Preserved *****

        2164        KK   CA07B
        2165        KO                                  21
        2166        HC       3
                    *
        2167        ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    73         CBA
                 V
                 V
    80        RCBA
                 .
                 .
    83           .         P28
                 .           .
                 .           .
    90        CP28............
                 .
                 .
    95           .-------->    DB28
    93        DT28
                 .
                 .
    98           .         CBB
                 .           V
                 .           V
   105           .        RCBB
                 .           .
                 .           .
   108       CP28a............
                 V
                 V
   111        R28a
                 .
                 .
   114           .         P27
                 .           .
                 .           .
   123           .           .-------->    DB27
   121           .        DT27
```

```
                 .          .
                 .          .
126        CP27.............
                 .
                 .
129              .       P27A
                 .          .
                 .          .
138              .          .-------->   DB27a
136              .      DT27a
                 .          .
                 .          .
141              .          .       P27B
                 .          .          .
                 .          .          .
150              .          .          .-------->   DB27b
148              .          .      DT27b
                 .          .          .
                 .          .          .
153              .          .          .        CBL
                 .          .          .          .
                 .          .          .          .
160        CCBL.................................
              V
              V
163        RCBL
                 .
                 .
168              .        CBK
                 .          .
                 .          .
175        CCBK............
              V
              V
178        RCBK
                 .
                 .
181              .        P14
                 .          .
                 .          .
190              .          .-------->    RB14
188              .       RT14
                 .          .
                 .          .
193        CP14............
                 .
                 .
196              .        P15
                 .          .
                 .          .
205              .          .-------->    DB15
203              .       DT15
                 .          .
                 .          .
208              .          .        CBJ
                 .          .          .
                 .          .          .
215        CP15........................
              V
              V
218         R15
                 .
                 .
221              .        CBH
```



```
                 .          V
                 .          V
228              .       RCBH
                 .          .
                 .          .
233              .          .       P25S
                 .          .          .
                 .          .          .
240              .      CP25S............
                 .          .
                 .          .
243        AFR0............
                 .
                 .
246              .         E1
                 .          V
                 .          V
253              .        RE1
                 .          .
                 .          .
256              .          .         E2
                 .          .          V
                 .          .          V
263              .          .        RE2
                 .          .          .
                 .          .          .
266              .          .          .        P13
                 .          .          .          .
                 .          .          .          .
275              .          .          .          .-------->    DB13
273              .          .          .       DT13
                 .          .          .          .
                 .          .          .          .
278              .       CP13........................
                 .          V
                 .          V
281              .        R13
                 .          .
                 .          .
284              .          .        P12
                 .          .          .
                 .          .          .
293              .          .          .-------->    DB12
291              .          .       DT12
                 .          .          .
                 .          .          .
296              .       CP12............
                 .          .
                 .          .
299              .          .         E3
                 .          .          V
                 .          .          V
306              .          .        RE3
                 .          .          .
                 .          .          .
309              .          .          .        P10
                 .          .          .          .
                 .          .          .          .
318              .          .          .          .-------->    DB10
316              .          .          .       DT10
                 .          .          .          .
                 .          .          .          .
321              .          .       CP10............
                 .          .          V
```

```
                                                  V
324                                             R10
                                                  .
327                                                 P11
                                                    .
336                                                 .-------->    DB11
334                                                DT11
                                                    .
339                                            CP11............
                                                    .
342                                                 E4
                                                    V
                                                    V
349                                                RE4
                                                    .
356                                                 .          P9
                                                    .          .
365                                                 .          .-------->    DB9
363                                                 .         DT9
                                                    .          .
368                                                 .          .         HV1
                                                    .          .          .
                                                    .          .          .
375                                                CP9......................
                                                    V
                                                    V
378                                                 R9
                                                    .
385                                                 .          P8
                                                    .          .
394                                                 .          .-------->    DB8
392                                                 .         DT8
                                                    .          .
397                                                 .          .          P7
                                                    .          .          .
406                                                 .          .          .-------->    DB7
404                                                 .          .         DT7
                                                    .          .          .
                                                    .          .          .
409                                                CP7......................
                                                    V
                                                    V
412                                                 R7
                                                    .
418                                                 .          P6
                                                    .          .
427                                                 .          .-------->    DB6
425                                                 .         DT6
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430                                                CP6............
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433                                        HPVLY......................
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436                                            A11MA
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444                                                 .-------> DA11MA
443                                        A11MAQ
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447                                        SA11MA
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                                                    V
454                                        RA11MA
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459                                                 .      A11MB
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467                                                 .          .-------> DA11MB
466                                                 .     A11MBQ
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470                                                 .     SA11MB
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498                                        RA11MB
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503                                                 .        A110
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510                                                 .      SA110
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517                                                 .      RA110
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562                                        A11G
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569                                      RA11GN
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574                                           A11KC
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581                                         SA11KC
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588                                  CA11KC.......................
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590                                  RA11KC
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595                                        A11J
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602                                       SA11J
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609                             CA11J.......................
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611                                   A11L
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619                                     .-------->   DA11L
618                                  DA11LQ
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622                                   RA11L
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627                                       A11I
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635                                        .-------->   DA11I
634                                      DA11IQ
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638                             CA11I.......................
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640                             RA11I
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645                                   A11EA
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652                                  RA11EA
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657                                       A11EB
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664                             CA11EB......................
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673                                   B41
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680                                        42
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687                                       B42
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696                                   RC41
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708                                  CA11F............
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710                             CA11E............
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712                             RA11E
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717                                   A09U
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725                                     .-------->   A09UI
724                                  DA09U
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728                                  RA09UW
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733                                       A09T
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740                                  CA09T............
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743                                     .-------->   A09TI
742                                  DA09T
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746                                  RA09TW
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751                                       A11A
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759                                        .-------->   DA11A
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758                                              DA11AQ
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762                                   CX23.........................
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                                        V
764                                   RX23
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769                                     .          S1
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776                                     .           .          P2
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785                                     .           .           .-------->     RB2
783                                     .           .         RT2
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788                                   CS1.........................
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791                                   RS1
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794                                     .          S2
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801                                     .           .          S3
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808                                   CS2.........................
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                                        V
811                                   RS2
                                        .
                                        .
814                                     .          P3
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823                                     .           .-------->     RB3
821                                     .         RT3
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826                                   CP3............
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838                                     .           .-------->    RB4b
836                                     .       RT4b
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841                                     .           .          S4
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848                                     .           .           .          P1
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857                                     .           .           .           .-------->     DB1
855                                     .           .           .         DT1
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870                                                .           .        RHV2
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875                                                .           .           .-------->   DBHV2
873                                                .           .      DTHV2
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878                                                .           .           .        P4a
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887                                                .           .           .         .-------->    DB4a
885                                                .           .           .       DT4a
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893                                     .       N11O
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901                                     .         .-------->   N11OI
900                                     .     DN11O
                                        .       V
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904                                     .    RN11OW
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910                                     .         .           .<-------   A09TI
909                                     .         .     DRA09T
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911                                     .         .     RA09TS
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916                                     .         .           .        A09R
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923                                     .     CA09R........................
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926                                     .         .-------->   A09RI
925                                     .     DA09R
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929                                     .    RA09RW
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934                                     .         .       A09S
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942                                     .         .         .-------->   DA09S
941                                     .         .     DA09SQ
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 962             .          .          .          .-------> A09QAI
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 965             .          .          .     RA09QW
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1017             .          .          .<-------  N11OI
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1032             .      DN11M
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1049             .          .          .-------> LN11JD
1048             .          .     LN11J
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1054             .      DN11J
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1084             .          .      SA09O
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1178       AFR2............
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1221          .          .      RN11NA
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1301          .          .          .      RN11JS
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1518                    .<-------  A09QI
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1532                        .-------> LA09MD
1531              LA09M
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1537                                        RA09M
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1549                                        CA09N............
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1551                                        LA09N
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1556                                        RA09N
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1562                                              .          .<-------   A09JI
1561                                              .     DRA09J
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1651                                     RA09GS
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1656                                             .        A09F
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1669                                     DA09F
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1673                                     RA09FW
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1678                                             .        A09E
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1686                                             .          .------->  LA09ED
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1691                                     RA09E
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1709                                     RA09C*
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1740             .          .          .        A09A
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1747             .     CA09A.........................
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1749             .    DA09AO
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1766             .          .          .-------> LA99TD
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1811             .          .          .        A99R
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1832        AFR5............
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1850             .          .    A07F.1
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1857             .          .          .    A07F.2
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1864             .          .          .        .        A07E.8
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1878             .          .          .    A07E.7
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1885             .          .    CA07E7............
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1899             .          .          .    RA07G2
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1917             .          .          .    RA07E3
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1930             .-------> DI7E.2
1929          DI7E.2
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                 V
1933          RA07E2
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1938             .     A07E.1
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1946             .          .-------> DI7E.1
1945             .     DI7E.1
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1993             .     DI7E.4
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2000             .-------> DIA07E
1999          DIA07E
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2003          RA07E
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2008             .     A07C
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2015          CA07C...........
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2017          RA07C
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2022             .     A07H
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2029             .     RA07H
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2035             .        .<-------  A09AI
2034             .     DA09AI
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2036             .     RA09AI
                 .        .
2041             .        .     A08B
                 .        .       .
2048             .     CA08B...........
                 .        V
                 .        V
2050             .     RA08B
                 .        .
2055             .        .     A07D
                 .        .       .
2062          CA07D...................................
                 V
                 V
2064          RA07D
                 .
2069             .     S30D
                 .        V
                 .        V
2076             .     RS30D
                 .        .
2081             .        .     S30C
                 .        .       .
2089             .        .       .<-------  A09FI
2088             .        .     DA09FI
                 .        .        V
                 .        .        V
2090             .        .     RA09FI
                 .        .       .
2095             .     XX1........................
                 .        .
2097             .        .     S30B
                 .        .       .
2104             .     CS30B...........
                 .        .
2107             .        .-------> DS30BI
2106             .     DS30BO
                 .        V
```

```
                                                  V
 2110          .          .        RS30BW
               .          .           .
 2115          .          .           .        S30A
               .          .           .          .
               .          .           .          .
 2122          .          .       CS30A...........
               .          .           .
               .          .           .
 2125          .          .           .-------> DS30AI
 2124          .          .       DS30AO
               .          .           V
               .          .           V
 2128          .          .       RS30AW
               .          .           .
               .          .           .
 2133          .          .           .         S30
               .          .           .          .
               .          .           .          .
 2143          .          .        CS30...........
               .          .           V
               .          .           V
 2145          .          .        RS30
               .          .           .
               .          .           .
 2150          .          .           .        A07B
               .          .           .          .
               .          .           .          .
 2161          .          .           .-------> LA07BD
 2160          .          .           .       LA07B
               .          .           .          .
               .          .           .          .
 2164          .       CA07B.......................
```

(***) 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   02JUN10  TIME  13:42:33  *                                          *           (916) 756-1104
   *
 *                                      *                                          *
   *
 ****************************************
****************************************
```

```
Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 10 Years
                                                                                **
107th Avenue and Union Hills Drive Design Concept Report                        **
                                                                               **
```



```
PROJECT NO.: FCD 2009C036                    G&M: 10388A                        **
                                                                                **

Original HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                     **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions        **
Modified HEC-1 Model: DCR10-6.DAT, Goodwin & Marshall, Inc., May 29, 2010 **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions        **
                                                                                **

1) NOAA2 Rainfall Data                                                          **

2) DDMSW V3.5.7 Used                                                            **

                                                                                **

*******************************************************************************
Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 10 Years
                                                                                **
Glendale/Peoria ADMPU Northwest Region Update                                   **
Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                   **
                      REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS                **
Modified HEC-1 Model: EN06BASE.DAT, Wood/Patel, SZ, May 2007                    **
                      10-Year 6-Hour HEC-1 Model for Existing Conditions        **
1) NOAA 2 Rainfall Data                                                         **
2) DDMSW MCUHP1 V3.3.2 Used                                                     **
                                                                                **
*******************************************************************************
*******************************************************************************
**                                                                             **
** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS         **
** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                   **
** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005              **
** THIS IS THE PREFERRED ALTERNATIVE MODEL                                     **
** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS               **
** USING LATEST SURVEY DATA.                                                   **
*******************************************************************************
*******************************************************************************
**                                                                             **
**                        Glendale/Peoria ADMP Update                          **
**                                                                             **
*******************************************************************************
*******************************************************************************
PROJECT:                  Glendale Peoria ADMP Update
CLIENT:                   Flood Control District of Maricopa County
PREPARED BY:              Entellus, Inc.
PROJECT No:               FCD 99-44                Entellus 310.017
FILE NAME: LEVEL3.DAT                CREATED DATE: JUNE 6, 2001
STORM:                    100-year 6-hour Storm
DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME       0918  ENDING TIME
                      ICENT         19  CENTURY MARK
```

```
              COMPUTATION INTERVAL     .03 HOURS
                  TOTAL TIME BASE   33.30 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

53 JD          INDEX STORM NO. 1
                     STRM        2.03  PRECIPITATION DEPTH
                     TRDA         .01  TRANSPOSITION DRAINAGE AREA

54 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       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                    .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

57 JD          INDEX STORM NO. 2
                     STRM        2.02  PRECIPITATION DEPTH
                     TRDA         .50  TRANSPOSITION DRAINAGE AREA

58 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       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                    .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

61 JD          INDEX STORM NO. 3
                     STRM        1.98  PRECIPITATION DEPTH
                     TRDA        2.80  TRANSPOSITION DRAINAGE AREA
```



```
62 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
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .03       .03       .03       .03       .03
                    .03       .03       .03       .03       .03       .03       .03       .03       .03       .03
                    .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .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

65 JD          INDEX STORM NO. 4
                     STRM        1.87  PRECIPITATION DEPTH
                     TRDA       16.00  TRANSPOSITION DRAINAGE AREA

66 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
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .02       .03       .03       .03       .03       .03       .03       .03
                    .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .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

69 JD          INDEX STORM NO. 5
                     STRM        1.65  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

70 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
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                    .02       .02       .02       .02       .02       .02       .02       .02       .02       .02
                    .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .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
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


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

            **************
            *            *
 2164 KK    *     CA07B  *
            *            *
            **************

 2165 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          0  Ppunch COMPUTED HYDROGRAPH
                       IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       1000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .033  TIME INTERVAL IN HOURS

1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM    TIME OF
          OPERATION        STATION   FLOW    PEAK                                          AREA      STAGE    MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR
          HYDROGRAPH AT
+                            CBA      7.    4.13          1.          0.          0.        .01
          ROUTED TO
+                           RCBA      7.    4.27          1.          0.          0.        .01
          HYDROGRAPH AT
+                            P28     29.    4.17          4.          1.          1.        .03
          2 COMBINED AT
+                           CP28     35.    4.20          5.          1.          1.        .03
          DIVERSION TO
+                           DB28     35.    4.20          2.          1.          0.        .03
          HYDROGRAPH AT
+                           DT28     30.    4.37          2.          1.          0.        .03
          HYDROGRAPH AT
+                            CBB     17.    4.13          1.          0.          0.        .02
          ROUTED TO
+                           RCBB     17.    4.17          1.          0.          0.        .02
          2 COMBINED AT
+                          CP28a     40.    4.37          4.          1.          1.        .05
```



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          ROUTED TO
+                           R28a     30.    4.60          4.          1.          1.        .05
          HYDROGRAPH AT
+                            P27     52.    4.23          9.          2.          2.        .06
          DIVERSION TO
+                           DB27     50.    4.17          3.          1.          0.        .06
          HYDROGRAPH AT
+                           DT27     52.    4.23          7.          2.          1.        .06
          2 COMBINED AT
+                           CP27     68.    4.53         11.          3.          2.        .12
          HYDROGRAPH AT
+                           P27A      8.    4.10          1.          0.          0.        .01
          DIVERSION TO
+                          DB27a      8.    4.10          0.          0.          0.        .01
          HYDROGRAPH AT
+                          DT27a      7.    4.17          1.          0.          0.        .01
          HYDROGRAPH AT
+                           P27B     11.    4.13          2.          0.          0.        .01
          DIVERSION TO
+                          DB27b     10.    4.07          1.          0.          0.        .01
          HYDROGRAPH AT
+                          DT27b     11.    4.13          1.          0.          0.        .01
          HYDROGRAPH AT
+                            CBL     24.    4.13          3.          1.          1.        .03
          4 COMBINED AT
+                           CCBL     96.    4.30         15.          4.          3.        .16
          ROUTED TO
+                           RCBL    105.    4.33         15.          4.          3.        .16
          HYDROGRAPH AT
+                            CBK     43.    4.23          4.          1.          1.        .05
          2 COMBINED AT
+                           CCBK    140.    4.33         19.          5.          3.        .22
          ROUTED TO
+                           RCBK    136.    4.37         19.          5.          3.        .22
          HYDROGRAPH AT
+                            P14      5.    4.17          0.          0.          0.        .01
          DIVERSION TO
+                           RB14      5.    4.17          0.          0.          0.        .01
          HYDROGRAPH AT
+                           RT14      0.     .00          0.          0.          0.        .01
          2 COMBINED AT
+                           CP14    136.    4.37         19.          5.          3.        .22
          HYDROGRAPH AT
```

+		P15	1.	4.47	0.	0.	0.	.01
+	DIVERSION TO	DB15	1.	4.47	0.	0.	0.	.01
+	HYDROGRAPH AT	DT15	0.	.00	0.	0.	0.	.01
+	HYDROGRAPH AT	CBJ	11.	4.20	1.	0.	0.	.01
+	3 COMBINED AT	CP15	144.	4.37	20.	5.	4.	.25
+	ROUTED TO	R15	142.	4.40	20.	5.	4.	.25
+	HYDROGRAPH AT	CBH	15.	4.10	1.	0.	0.	.01
+	ROUTED TO	RCBH	13.	4.20	1.	0.	0.	.01
+	HYDROGRAPH AT	P25S	13.	4.27	2.	1.	0.	.03
+	2 COMBINED AT	CP25S	25.	4.23	3.	1.	1.	.04
+	2 COMBINED AT	AFR0	162.	4.40	24.	6.	4.	.29
+	HYDROGRAPH AT	E1	12.	4.13	1.	0.	0.	.01
+	ROUTED TO	RE1	12.	4.23	1.	0.	0.	.01
+	HYDROGRAPH AT	E2	11.	4.17	1.	0.	0.	.02
+	ROUTED TO	RE2	11.	4.20	1.	0.	0.	.02
+	HYDROGRAPH AT	P13	55.	4.13	6.	2.	1.	.06
+	DIVERSION TO	DB13	49.	4.07	2.	1.	0.	.06
+	HYDROGRAPH AT	DT13	55.	4.13	4.	1.	1.	.06
+	3 COMBINED AT	CP13	75.	4.17	6.	1.	1.	.09
+	ROUTED TO	R13	74.	4.27	6.	1.	1.	.09
+	HYDROGRAPH AT	P12	29.	4.23	5.	1.	1.	.04
+	DIVERSION TO	DB12	29.	4.23	2.	1.	0.	.04

+	HYDROGRAPH AT	DT12	25.	4.40	2.	1.	0.	.04
+	2 COMBINED AT	CP12	85.	4.40	8.	2.	1.	.13
+	HYDROGRAPH AT	E3	25.	4.60	6.	1.	1.	.08
+	ROUTED TO	RE3	25.	4.67	6.	1.	1.	.08
+	HYDROGRAPH AT	P10	42.	4.20	6.	1.	1.	.05
+	DIVERSION TO	DB10	42.	4.17	2.	1.	0.	.05
+	HYDROGRAPH AT	DT10	42.	4.23	4.	1.	1.	.05
+	2 COMBINED AT	CP10	53.	4.30	9.	2.	2.	.14
+	ROUTED TO	R10	53.	4.43	9.	2.	2.	.14
+	HYDROGRAPH AT	P11	16.	4.43	4.	1.	1.	.04
+	DIVERSION TO	DB11	16.	4.43	2.	1.	0.	.04
+	HYDROGRAPH AT	DT11	13.	4.90	2.	1.	0.	.04
+	2 COMBINED AT	CP11	53.	4.43	11.	3.	2.	.18
+	HYDROGRAPH AT	E4	11.	4.53	3.	1.	0.	.04
+	ROUTED TO	RE4	11.	4.60	3.	1.	0.	.04
+	HYDROGRAPH AT	P9	36.	4.17	5.	1.	1.	.05
+	DIVERSION TO	DB9	35.	4.13	2.	0.	0.	.05
+	HYDROGRAPH AT	DT9	35.	4.20	3.	1.	1.	.05
+	HYDROGRAPH AT	HV1	2.	4.40	1.	0.	0.	.01
+	3 COMBINED AT	CP9	41.	4.20	6.	2.	1.	.09
+	ROUTED TO	R9	41.	4.27	6.	2.	1.	.09

+	HYDROGRAPH AT	P8	6.	4.33	1.	0.	0.	.01
+	DIVERSION TO	DB8	6.	4.33	1.	0.	0.	.01
+	HYDROGRAPH AT	DT8	5.	4.53	1.	0.	0.	.01
+	HYDROGRAPH AT	P7	7.	4.27	1.	0.	0.	.01
+	DIVERSION TO	DB7	7.	4.27	1.	0.	0.	.01
+	HYDROGRAPH AT	DT7	7.	4.43	1.	0.	0.	.01
+	3 COMBINED AT	CP7	43.	4.53	8.	2.	1.	.12
+	ROUTED TO	R7	45.	4.30	8.	2.	1.	.12
+	HYDROGRAPH AT	P6	19.	4.67	7.	2.	1.	.07
+	DIVERSION TO	DB6	19.	4.67	4.	1.	1.	.07
+	HYDROGRAPH AT	DT6	16.	5.23	4.	1.	1.	.07
+	2 COMBINED AT	CP6	45.	4.30	12.	3.	2.	.19
+	3 COMBINED AT	HPVLY	174.	4.40	31.	8.	6.	.50
+	HYDROGRAPH AT	A11MA	106.	4.13	9.	2.	2.	.07
+	DIVERSION TO	DA11MA	106.	4.13	7.	2.	1.	.07
+	HYDROGRAPH AT	A11MAQ	49.	4.37	2.	0.	0.	.07
+	ROUTED TO	SA11MA	12.	4.63	2.	0.	0.	.07
+	ROUTED TO	RA11MA	11.	4.93	2.	0.	0.	.07
+	HYDROGRAPH AT	A11MB	262.	4.17	29.	7.	5.	.19
+	DIVERSION TO	DA11MB	181.	4.00	7.	2.	1.	.19
+	HYDROGRAPH AT	A11MBQ	262.	4.17	22.	5.	4.	.19
	ROUTED TO							

+		SA11MB	31.	4.80	21.	5.	4.	.19
+	HYDROGRAPH AT	A11NA	93.	4.13	8.	2.	2.	.08
+	ROUTED TO	SA11NA	25.	4.47	8.	2.	2.	.08
+	ROUTED TO	RA11NA	25.	4.77	8.	2.	2.	.08
+	3 COMBINED AT	CA11MB	67.	4.90	31.	8.	6.	.34
+	ROUTED TO	RA11MB	66.	5.23	30.	8.	6.	.34
+	HYDROGRAPH AT	A11O	52.	4.20	6.	2.	1.	.06
+	ROUTED TO	SA11O	27.	4.50	6.	2.	1.	.06
+	ROUTED TO	RA11O	27.	4.83	6.	2.	1.	.06
+	HYDROGRAPH AT	A11KB	103.	4.17	12.	3.	2.	.11
+	ROUTED TO	SA11KB	24.	4.73	12.	3.	2.	.11
+	HYDROGRAPH AT	A11KA	92.	4.13	10.	3.	2.	.08
+	ROUTED TO	SA11KA	24.	4.57	10.	3.	2.	.08
+	ROUTED TO	RA11KA	24.	4.87	10.	3.	2.	.08
+	3 COMBINED AT	CA11KB	75.	4.83	28.	7.	5.	.24
+	ROUTED TO	RA11KB	75.	5.03	28.	7.	5.	.24
+	HYDROGRAPH AT	A11G	38.	4.37	6.	2.	1.	.06
+	ROUTED TO	RA11GN	36.	4.60	6.	2.	1.	.06
+	HYDROGRAPH AT	A11KC	123.	4.17	14.	3.	2.	.13
+	ROUTED TO	SA11KC	31.	4.67	13.	3.	2.	.13
+	3 COMBINED AT	CA11KC	131.	4.80	47.	12.	9.	.44
+	ROUTED TO	RA11KC	131.	4.90	47.	12.	9.	.44

+	HYDROGRAPH AT	A11J	69.	4.50	13.	3.	2.	.11
+	ROUTED TO	SA11J	30.	5.13	13.	3.	2.	.11
+	3 COMBINED AT	CA11J	208.	5.07	84.	22.	16.	.89
+	HYDROGRAPH AT	A11L	189.	4.40	41.	10.	7.	.26
+	DIVERSION TO	DA11L	189.	4.40	15.	4.	3.	.26
+	HYDROGRAPH AT	DA11LQ	184.	4.50	26.	6.	5.	.26
+	ROUTED TO	RA11L	162.	4.83	26.	6.	5.	.26
+	HYDROGRAPH AT	A11I	155.	4.23	25.	6.	4.	.15
+	DIVERSION TO	DA11I	155.	4.23	24.	6.	4.	.15
+	HYDROGRAPH AT	DA11IQ	15.	5.50	1.	0.	0.	.15
+	3 COMBINED AT	CA11I	342.	4.93	106.	27.	20.	1.31
+	ROUTED TO	RA11I	331.	5.27	105.	27.	20.	1.31
+	HYDROGRAPH AT	A11EA	52.	4.57	11.	3.	2.	.14
+	ROUTED TO	RA11EA	51.	4.77	11.	3.	2.	.14
+	HYDROGRAPH AT	A11EB	41.	4.90	13.	3.	2.	.19
+	3 COMBINED AT	CA11EB	368.	5.27	118.	31.	22.	1.64
+	HYDROGRAPH AT	41	56.	4.20	5.	1.	1.	.05
+	ROUTED TO	B41	46.	4.27	5.	1.	1.	.05
+	HYDROGRAPH AT	42	88.	4.20	10.	2.	2.	.08
+	ROUTED TO	B42	77.	4.27	10.	2.	2.	.08
+	2 COMBINED AT	C41	122.	4.27	15.	4.	3.	.13

+	ROUTED TO	RC41	104.	4.77	15.	4.	3.	.13
+	HYDROGRAPH AT	A11F	131.	4.60	25.	6.	5.	.33
+	2 COMBINED AT	CA11F	223.	4.70	39.	10.	7.	.46
+	2 COMBINED AT	CA11E	428.	5.23	139.	36.	26.	2.11
+	ROUTED TO	RA11E	422.	5.33	139.	36.	26.	2.11
+	HYDROGRAPH AT	A09U	136.	4.27	17.	4.	3.	.17
+	DIVERSION TO	A09UI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09U	136.	4.27	17.	4.	3.	.17
+	ROUTED TO	RA09UW	111.	4.73	17.	4.	3.	.17
+	HYDROGRAPH AT	A09T	71.	4.53	12.	3.	2.	.18
+	2 COMBINED AT	CA09T	172.	4.67	29.	7.	5.	.36
+	DIVERSION TO	A09TI	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	DA09T	172.	4.67	29.	7.	5.	.36
+	ROUTED TO	RA09TW	169.	4.77	29.	7.	5.	.36
+	HYDROGRAPH AT	A11A	202.	4.47	37.	9.	7.	.30
+	DIVERSION TO	DA11A	200.	4.43	16.	4.	3.	.30
+	HYDROGRAPH AT	DA11AQ	201.	4.50	22.	6.	4.	.30
+	3 COMBINED AT	CX23	485.	5.30	164.	43.	31.	2.76
+	ROUTED TO	RX23	472.	5.57	164.	43.	31.	2.76
+	HYDROGRAPH AT	S1	46.	4.57	10.	3.	2.	.12
+	HYDROGRAPH AT	P2	50.	4.13	6.	1.	1.	.05
	DIVERSION TO							

+		RB2	50.	4.13	6.	1.	1.	.05
+	HYDROGRAPH AT	RT2	0.	.00	0.	0.	0.	.05
+	3 COMBINED AT	CS1	474.	5.57	167.	44.	32.	2.93
+	ROUTED TO	RS1	474.	5.60	167.	44.	32.	2.93
+	HYDROGRAPH AT	S2	13.	4.10	1.	0.	0.	.01
+	HYDROGRAPH AT	S3	8.	4.07	0.	0.	0.	.01
+	3 COMBINED AT	CS2	473.	5.63	167.	44.	32.	2.95
+	ROUTED TO	RS2	473.	5.63	167.	44.	32.	2.95
+	HYDROGRAPH AT	P3	37.	4.23	6.	2.	1.	.05
+	DIVERSION TO	RB3	37.	4.23	6.	2.	1.	.05
+	HYDROGRAPH AT	RT3	0.	.00	0.	0.	0.	.05
+	2 COMBINED AT	CP3	473.	5.63	167.	44.	32.	3.01
+	HYDROGRAPH AT	P4b	22.	4.10	2.	0.	0.	.02
+	DIVERSION TO	RB4b	16.	3.97	1.	0.	0.	.02
+	HYDROGRAPH AT	RT4b	22.	4.10	1.	0.	0.	.02
+	HYDROGRAPH AT	S4	5.	4.37	1.	0.	0.	.01
+	HYDROGRAPH AT	P1	15.	4.33	2.	1.	0.	.03
+	DIVERSION TO	DB1	15.	4.33	1.	0.	0.	.03
+	HYDROGRAPH AT	DT1	12.	4.50	1.	0.	0.	.03
+	2 COMBINED AT	CP1	17.	4.50	2.	1.	0.	.04
+	HYDROGRAPH AT	HV2	3.	5.30	2.	1.	1.	.03
+	ROUTED TO	RHV2	3.	5.37	2.	1.	1.	.03

+	DIVERSION TO	DBHV2	3.	5.37	1.	0.	0.	.03
+	HYDROGRAPH AT	DTHV2	2.	7.17	1.	0.	0.	.03
+	HYDROGRAPH AT	P4a	22.	4.27	4.	1.	1.	.04
+	DIVERSION TO	DB4a	22.	4.27	1.	0.	0.	.04
+	HYDROGRAPH AT	DT4a	21.	4.37	3.	1.	0.	.04
+	5 COMBINED AT	SOUTH	472.	5.63	169.	45.	32.	3.14
+	HYDROGRAPH AT	N11O	27.	4.43	3.	1.	1.	.05
+	DIVERSION TO	N11OI	24.	4.43	3.	1.	1.	.05
+	HYDROGRAPH AT	DN11O	3.	4.43	0.	0.	0.	.05
+	ROUTED TO	RN11OW	2.	5.50	0.	0.	0.	.05
+	HYDROGRAPH AT	DRA09T	0.	.00	0.	0.	0.	.36
+	ROUTED TO	RA09TS	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	A09R	33.	4.83	9.	2.	2.	.14
+	3 COMBINED AT	CA09R	33.	4.83	9.	2.	2.	.20
+	DIVERSION TO	A09RI	32.	4.83	9.	2.	2.	.20
+	HYDROGRAPH AT	DA09R	0.	4.83	0.	0.	0.	.20
+	ROUTED TO	RA09RW	0.	7.20	0.	0.	0.	.20
+	HYDROGRAPH AT	A09S	59.	4.27	12.	3.	2.	.07
+	DIVERSION TO	DA09S	59.	4.27	12.	3.	2.	.07
+	HYDROGRAPH AT	DA09SQ	0.	.00	0.	0.	0.	.07
+	2 COMBINED AT	CA09S	0.	7.20	0.	0.	0.	.27

+	ROUTED TO	RA09SW	0.	7.37	0.	0.	0.	.27
+	HYDROGRAPH AT	A09QA	37.	4.50	6.	1.	1.	.09
+	2 COMBINED AT	CA09QA	36.	4.50	6.	1.	1.	.36
+	DIVERSION TO	A09QAI	36.	4.50	5.	1.	1.	.36
+	HYDROGRAPH AT	DA09QA	1.	5.20	0.	0.	0.	.36
+	ROUTED TO	RA09QW	1.	5.33	0.	0.	0.	.36
+	HYDROGRAPH AT	A99YA	55.	4.37	7.	2.	1.	.10
+	2 COMBINED AT	CA99YA	55.	4.37	7.	2.	1.	.46
+	ROUTED TO	RA99YA	53.	4.47	7.	2.	1.	.46
+	HYDROGRAPH AT	A99YB	66.	4.50	10.	3.	2.	.17
+	3 COMBINED AT	CA99YB	468.	5.63	172.	46.	33.	3.77
+	3 COMBINED AT	AFR1	483.	5.63	193.	51.	37.	4.56
+	HYDROGRAPH AT	BA09UI	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09US	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	N11NB	56.	4.53	11.	3.	2.	.14
+	2 COMBINED AT	CN11NB	56.	4.53	11.	3.	2.	.14
+	ROUTED TO	RN11NW	51.	5.10	11.	3.	2.	.14
+	HYDROGRAPH AT	BN11OI	24.	4.43	3.	1.	1.	.05
+	ROUTED TO	RN11OS	19.	5.10	3.	1.	1.	.05
+	HYDROGRAPH AT	N11M	44.	4.43	6.	1.	1.	.10
+	3 COMBINED AT	CN11M	80.	5.07	20.	5.	4.	.24
	DIVERSION TO							

+		N11MI	20.	5.07	5.	1.	1.	.24
+	HYDROGRAPH AT	DN11M	60.	5.07	15.	4.	3.	.24
+	ROUTED TO	RN11MS	58.	5.33	15.	4.	3.	.24
+	HYDROGRAPH AT	N11J	79.	4.50	20.	5.	4.	.24
+	DIVERSION TO	LN11JD	67.	4.33	4.	1.	1.	.24
+	HYDROGRAPH AT	LN11J	79.	4.50	16.	4.	3.	.24
+	2 COMBINED AT	CN11J	107.	4.73	31.	8.	6.	.48
+	DIVERSION TO	N11JI	107.	4.73	31.	8.	6.	.48
+	HYDROGRAPH AT	DN11J	0.	.00	0.	0.	0.	.48
+	ROUTED TO	RN11JW	0.	.00	0.	0.	0.	.48
+	HYDROGRAPH AT	DRN11M	20.	5.07	5.	1.	1.	.24
+	ROUTED TO	RN11MW	18.	5.80	5.	1.	1.	.24
+	2 COMBINED AT	CX4	18.	5.80	5.	1.	1.	.48
+	ROUTED TO	RX4	17.	6.30	5.	1.	1.	.48
+	HYDROGRAPH AT	A09O	40.	5.00	14.	4.	3.	.19
+	ROUTED TO	SA09O	19.	6.13	12.	4.	3.	.19
+	HYDROGRAPH AT	BA09RI	32.	4.83	9.	2.	2.	.20
+	ROUTED TO	RA09RS	31.	5.30	9.	2.	2.	.20
+	3 COMBINED AT	CA09O	49.	5.77	24.	6.	5.	.68
+	DIVERSION TO	A09OI	49.	5.77	24.	6.	5.	.68
+	HYDROGRAPH AT	DA09O	0.	.00	0.	0.	0.	.68
+	ROUTED TO	RA09OW	0.	.00	0.	0.	0.	.68

+	HYDROGRAPH AT	A09P	64.	4.70	14.	4.	3.	.19
+	ROUTED TO	SA09P	29.	5.43	14.	4.	3.	.19
+	2 COMBINED AT	CA09P	25.	5.43	12.	3.	2.	.87
+	ROUTED TO	RA09P	25.	5.53	12.	3.	2.	.87
+	HYDROGRAPH AT	BA09QA	36.	4.50	5.	1.	1.	.36
+	ROUTED TO	RA09QB	34.	4.80	5.	1.	1.	.36
+	HYDROGRAPH AT	A09QB	57.	4.37	11.	3.	2.	.14
+	3 COMBINED AT	CA09Q	71.	4.77	24.	6.	4.	1.01
+	DIVERSION TO	A09QI	71.	4.77	24.	6.	4.	1.01
+	HYDROGRAPH AT	DA09Q	0.	.00	0.	0.	0.	1.01
+	ROUTED TO	RA09QW	0.	.00	0.	0.	0.	1.01
+	HYDROGRAPH AT	A10A	94.	4.47	14.	4.	3.	.19
+	2 COMBINED AT	CA10A	72.	4.50	12.	3.	2.	1.20
+	ROUTED TO	RA10A	71.	4.57	12.	3.	2.	1.20
+	HYDROGRAPH AT	A99X	233.	4.30	32.	8.	6.	.26
+	2 COMBINED AT	CA99X	210.	4.37	38.	10.	7.	1.46
+	2 COMBINED AT	AFR2	472.	5.63	210.	56.	41.	6.02
+	HYDROGRAPH AT	BA09OI	49.	5.77	24.	6.	5.	.68
+	ROUTED TO	RA09OS	49.	6.17	23.	6.	5.	.68
+	HYDROGRAPH AT	A09K	125.	4.83	26.	7.	5.	.41
+	DIVERSION TO	A09KI	91.	4.83	19.	5.	3.	.41

+	HYDROGRAPH AT	DA09K	34.	4.83	7.	2.	1.	.41
+	2 COMBINED AT	CX7	65.	5.80	32.	9.	6.	.41
+	ROUTED TO	RX7S	64.	6.07	32.	9.	6.	.41
+	HYDROGRAPH AT	N11NA	28.	4.13	2.	1.	0.	.02
+	ROUTED TO	RN11NA	20.	4.60	2.	1.	0.	.02
+	HYDROGRAPH AT	N11NC	91.	4.37	12.	3.	2.	.17
+	2 COMBINED AT	CN11NC	103.	4.43	15.	4.	3.	.19
+	DIVERSION TO	N11NP	103.	4.43	15.	4.	3.	.19
+	HYDROGRAPH AT	DN11NC	0.	.00	0.	0.	0.	.19
+	ROUTED TO	RN11NC	0.	.00	0.	0.	0.	.19
+	HYDROGRAPH AT	N11ND	23.	4.33	5.	1.	1.	.05
+	HYDROGRAPH AT	N11K	54.	4.47	13.	3.	2.	.17
+	3 COMBINED AT	CN11K	76.	4.43	18.	4.	3.	.41
+	DIVERSION TO	N11KP	55.	4.23	16.	4.	3.	.41
+	HYDROGRAPH AT	DN11KS	21.	4.43	2.	0.	0.	.41
+	ROUTED TO	RN11K	14.	5.30	2.	0.	0.	.41
+	DIVERSION TO	X5I	0.	.00	0.	0.	0.	.41
+	HYDROGRAPH AT	DX5	14.	5.30	2.	0.	0.	.41
+	ROUTED TO	RX5W	12.	5.80	2.	0.	0.	.41
+	HYDROGRAPH AT	N11H	131.	4.83	26.	7.	5.	.42
+	2 COMBINED AT	CN11H	106.	4.83	22.	6.	4.	.83
	ROUTED TO							

+	RN11H	98.	5.17	22.	6.	4.	.83
+ HYDROGRAPH AT	BN11JI	107.	4.73	31.	8.	6.	.48
+ ROUTED TO	RN11JS	106.	5.50	31.	8.	6.	.48
+ HYDROGRAPH AT	N11G	165.	4.83	31.	8.	6.	.52
+ 3 COMBINED AT	CN11G	192.	5.23	58.	15.	11.	1.36
+ ROUTED TO	RN11G	186.	5.40	58.	15.	11.	1.36
+ HYDROGRAPH AT	N11DA	124.	4.43	29.	7.	5.	.26
+ DIVERSION TO	LDAOUT	124.	4.43	16.	4.	3.	.26
+ HYDROGRAPH AT	LN11DA	98.	4.83	13.	3.	2.	.26
+ ROUTED TO	SN11DA	62.	5.20	13.	3.	2.	.26
+ DIVERSION TO	D11DAS	16.	5.20	5.	1.	1.	.26
+ HYDROGRAPH AT	N11DAW	46.	5.20	8.	2.	1.	.26
+ ROUTED TO	RN11DA	45.	5.47	8.	2.	1.	.26
+ HYDROGRAPH AT	N11FB	48.	4.47	13.	3.	2.	.12
+ DIVERSION TO	LN1FBD	48.	4.47	13.	3.	2.	.12
+ HYDROGRAPH AT	LN11FB	0.	.00	0.	0.	0.	.12
+ 2 COMBINED AT	CN11FB	45.	5.47	8.	2.	1.	.38
+ 2 COMBINED AT	C98RGL	186.	5.63	58.	15.	11.	1.73
+ ROUTED TO	RN11FB	172.	5.77	54.	14.	10.	1.73
+ HYDROGRAPH AT	DRA09K	91.	4.83	19.	5.	3.	.41
+ ROUTED TO	RA09KS	87.	5.07	19.	5.	3.	.41
+ HYDROGRAPH AT	N11FA	84.	4.43	21.	5.	4.	.18

+ DIVERSION TO	LN1FAD	84.	4.43	16.	4.	3.	.18
+ HYDROGRAPH AT	LN11FA	39.	5.30	6.	1.	1.	.18
+ HYDROGRAPH AT	A09GA	111.	4.10	14.	3.	2.	.07
+ DIVERSION TO	L09GAD	111.	4.10	12.	3.	2.	.07
+ HYDROGRAPH AT	LA09GA	24.	4.60	2.	0.	0.	.07
+ 4 COMBINED AT	CN11FA	192.	5.77	63.	16.	11.	1.99
+ ROUTED TO	RN11FA	190.	5.83	63.	16.	11.	1.99
+ HYDROGRAPH AT	A09GB	11.	4.90	5.	2.	1.	.05
+ DIVERSION TO	L09GBD	11.	4.90	5.	1.	1.	.05
+ HYDROGRAPH AT	LA09GB	1.	9.90	0.	0.	0.	.05
+ 2 COMBINED AT	CA09G	190.	5.83	62.	16.	11.	2.04
+ DIVERSION TO	A09GI	37.	5.83	12.	3.	2.	2.04
+ HYDROGRAPH AT	DA09G	150.	5.83	49.	12.	9.	2.04
+ ROUTED TO	RA09GW	147.	5.90	49.	12.	9.	2.04
+ 2 COMBINED AT	CX8	148.	6.03	58.	15.	11.	2.45
+ ROUTED TO	RX8W	145.	6.23	57.	15.	11.	2.45
+ HYDROGRAPH AT	A09H	83.	4.60	26.	7.	5.	.24
+ DIVERSION TO	LA09HD	83.	4.60	25.	6.	5.	.24
+ HYDROGRAPH AT	LA09H	10.	7.30	2.	0.	0.	.24
+ 2 COMBINED AT	CA09H1	145.	6.23	57.	15.	11.	2.69
+ HYDROGRAPH AT	A09J	70.	4.47	18.	5.	3.	.17

+	DIVERSION TO	LA09JD	70.	4.47	16.	4.	3.	.17
+	HYDROGRAPH AT	LA09J	20.	5.83	3.	1.	1.	.17
+	DIVERSION TO	A09JI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09J	20.	5.83	3.	1.	1.	.17
+	ROUTED TO	RA09JS	15.	6.47	3.	1.	1.	.17
+	2 COMBINED AT	CA09H	152.	6.27	57.	15.	11.	2.85
+	ROUTED TO	RA09H	129.	6.33	51.	13.	10.	2.85
+	HYDROGRAPH AT	BA09QI	71.	4.77	24.	6.	4.	1.01
+	ROUTED TO	RA09QS	70.	4.97	24.	6.	4.	1.01
+	HYDROGRAPH AT	A09M	100.	4.67	24.	6.	4.	.25
+	DIVERSION TO	LA09MD	100.	4.67	14.	3.	3.	.25
+	HYDROGRAPH AT	LA09M	77.	5.00	11.	3.	2.	.25
+	2 COMBINED AT	CA09M	168.	5.00	40.	10.	7.	.25
+	ROUTED TO	RA09M	156.	5.13	40.	10.	7.	.25
+	HYDROGRAPH AT	A09N	57.	4.37	12.	3.	2.	.11
+	2 COMBINED AT	CA09N	184.	5.10	52.	13.	10.	.36
+	ROUTED TO	LA09N	110.	5.63	48.	13.	10.	.36
+	ROUTED TO	RA09N	110.	5.73	48.	13.	10.	.36
+	HYDROGRAPH AT	DRA09J	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09JW	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	A09L	58.	4.47	15.	4.	3.	.14
	3 COMBINED AT							

+		CA09L	130.	5.60	61.	17.	12.	.50
+	ROUTED TO	LA09L	122.	5.93	60.	17.	12.	.50
+	ROUTED TO	RA09LS	122.	6.03	60.	17.	12.	.50
+	HYDROGRAPH AT	A09IH	42.	4.37	10.	2.	2.	.09
+	2 COMBINED AT	CA09IH	123.	5.97	66.	19.	14.	.59
+	ROUTED TO	LA09IH	111.	6.43	64.	19.	14.	.59
+	HYDROGRAPH AT	A09I	59.	4.47	16.	4.	3.	.13
+	DIVERSION TO	LA09ID	59.	4.47	11.	3.	2.	.13
+	HYDROGRAPH AT	LA09I	33.	5.30	6.	1.	1.	.13
+	3 COMBINED AT	CX10	178.	6.33	85.	25.	18.	3.57
+	ROUTED TO	RX10	175.	6.60	85.	25.	18.	3.57
+	HYDROGRAPH AT	A99V	96.	4.57	15.	4.	3.	.21
+	2 COMBINED AT	CA99V	172.	6.60	88.	26.	19.	3.77
+	HYDROGRAPH AT	A10	121.	4.40	15.	4.	3.	.21
+	HYDROGRAPH AT	A99W	96.	4.77	23.	6.	4.	.22
+	DIVERSION TO	LA99WD	96.	4.77	14.	3.	2.	.22
+	HYDROGRAPH AT	LA99W	79.	5.07	10.	3.	2.	.22
+	4 COMBINED AT	AFR3	473.	5.80	253.	71.	51.	10.22
+	HYDROGRAPH AT	DRA09G	37.	5.83	12.	3.	2.	2.04
+	ROUTED TO	RA09GS	34.	6.47	12.	3.	2.	2.04
+	HYDROGRAPH AT	A09F	186.	4.70	45.	11.	8.	.37
+	DIVERSION TO	LA09FD	186.	4.70	27.	7.	5.	.37

+	HYDROGRAPH AT	LA09F	146.	5.03	18.	5.	3.	.37
+	2 COMBINED AT	CA09F	146.	5.03	43.	11.	8.	.37
+	DIVERSION TO	A09FI	10.	5.03	1.	0.	0.	.37
+	HYDROGRAPH AT	DA09F	137.	5.03	42.	11.	8.	.37
+	ROUTED TO	RA09FW	125.	6.07	41.	11.	8.	.37
+	HYDROGRAPH AT	A09E	64.	4.47	17.	5.	3.	.15
+	DIVERSION TO	LA09ED	64.	4.47	17.	4.	3.	.15
+	HYDROGRAPH AT	LA09E	10.	6.60	1.	0.	0.	.15
+	2 COMBINED AT	CA09E	125.	6.07	43.	11.	8.	.51
+	ROUTED TO	RA09E	121.	6.20	42.	11.	8.	.51
+	HYDROGRAPH AT	A09D	286.	4.20	34.	9.	6.	.25
+	DIVERSION TO	LA09DD	286.	4.20	31.	8.	6.	.25
+	HYDROGRAPH AT	LA09D	52.	4.80	3.	1.	1.	.25
+	2 COMBINED AT	CA09C*	121.	6.20	44.	11.	8.	.77
+	ROUTED TO	RA09C*	106.	6.23	39.	10.	7.	.77
+	HYDROGRAPH AT	A09C	27.	4.57	5.	1.	1.	.07
+	2 COMBINED AT	CA09C	105.	6.20	42.	11.	8.	.84
+	ROUTED TO	RA09C	104.	6.33	41.	11.	8.	.84
+	HYDROGRAPH AT	A09B	63.	4.07	7.	2.	1.	.04
+	ROUTED TO	RA09B	48.	4.60	7.	2.	1.	.04
+	HYDROGRAPH AT	A09A	32.	4.77	10.	2.	2.	.08

+	3 COMBINED AT	CA09A	108.	6.30	53.	14.	10.	.96
+	DIVERSION TO	A09AI	0.	6.23	0.	0.	0.	.96
+	HYDROGRAPH AT	DA09AO	108.	6.30	53.	14.	10.	.96
+	ROUTED TO	RA09AW	96.	7.33	51.	14.	10.	.96
+	HYDROGRAPH AT	A99T	37.	4.07	3.	1.	1.	.03
+	DIVERSION TO	LA99TD	26.	3.93	1.	0.	0.	.03
+	HYDROGRAPH AT	LA99T	37.	4.07	2.	0.	0.	.03
+	ROUTED TO	RA99T	28.	4.23	2.	0.	0.	.03
+	HYDROGRAPH AT	A09	97.	4.47	15.	4.	3.	.18
+	3 COMBINED AT	CA09	90.	7.37	58.	17.	12.	1.17
+	HYDROGRAPH AT	A99U	34.	4.40	7.	2.	1.	.07
+	3 COMBINED AT	AFR4	481.	5.80	273.	79.	57.	11.46
+	HYDROGRAPH AT	A99S	13.	4.93	4.	1.	1.	.08
+	HYDROGRAPH AT	A08A	26.	5.13	10.	3.	2.	.14
+	ROUTED TO	RA08A	26.	5.33	10.	3.	2.	.14
+	HYDROGRAPH AT	A99R	20.	4.33	3.	1.	0.	.04
+	ROUTED TO	RA99R	18.	4.70	3.	1.	0.	.04
+	HYDROGRAPH AT	A08	69.	4.13	5.	1.	1.	.08
+	4 COMBINED AT	CA08	72.	4.13	21.	6.	4.	.33
+	2 COMBINED AT	AFR5	489.	5.80	278.	80.	58.	11.79
+	HYDROGRAPH AT	A07G.1	212.	4.23	34.	9.	6.	.23
	DIVERSION TO							

+		LA07GD	212.	4.23	26.	7.	5.	.23
+	HYDROGRAPH AT	LA07G	97.	4.77	9.	2.	2.	.23
+	ROUTED TO	RA07G	72.	5.10	9.	2.	2.	.23
+	HYDROGRAPH AT	A07F.1	40.	4.87	14.	4.	3.	.13
+	HYDROGRAPH AT	A07F.2	23.	4.63	6.	2.	1.	.07
+	HYDROGRAPH AT	A07E.8	9.	4.07	1.	0.	0.	.01
+	3 COMBINED AT	CA07F	62.	4.73	22.	6.	4.	.21
+	ROUTED TO	RA07F	62.	4.77	22.	6.	4.	.21
+	HYDROGRAPH AT	A07E.7	11.	4.03	1.	0.	0.	.01
+	2 COMBINED AT	CA07E7	62.	4.77	23.	6.	4.	.22
+	ROUTED TO	RA07E7	62.	4.83	23.	6.	4.	.22
+	HYDROGRAPH AT	A07G.2	9.	4.43	3.	1.	1.	.03
+	ROUTED TO	RA07G2	9.	4.57	3.	1.	1.	.03
+	HYDROGRAPH AT	A07E.3	71.	4.13	8.	2.	1.	.06
+	2 COMBINED AT	CA07E3	73.	4.13	11.	3.	2.	.09
+	DIVERSION TO	DI7E.3	1.	1.67	0.	0.	0.	.09
+	HYDROGRAPH AT	DI7E.3	73.	4.13	11.	3.	2.	.09
+	ROUTED TO	RA07E3	71.	4.23	11.	3.	2.	.09
+	HYDROGRAPH AT	A07E.2	20.	4.17	3.	1.	1.	.03
+	DIVERSION TO	DI7E.2	0.	1.70	0.	0.	0.	.03
+	HYDROGRAPH AT	DI7E.2	20.	4.17	3.	1.	1.	.03
+	ROUTED TO	RA07E2	18.	4.57	3.	1.	1.	.03

+	HYDROGRAPH AT	A07E.1	33.	4.23	6.	2.	1.	.04
+	DIVERSION TO	DI7E.1	33.	4.23	3.	1.	1.	.04
+	HYDROGRAPH AT	DI7E.1	31.	4.37	4.	1.	1.	.04
+	ROUTED TO	RA07E1	27.	4.57	4.	1.	1.	.04
+	HYDROGRAPH AT	A07E.6	39.	4.03	4.	1.	1.	.02
+	DIVERSION TO	DI7E.6	1.	2.43	0.	0.	0.	.02
+	HYDROGRAPH AT	DI7E.6	39.	4.03	4.	1.	1.	.02
+	ROUTED TO	RA07E6	37.	4.13	4.	1.	1.	.02
+	HYDROGRAPH AT	A07E.5	44.	4.13	6.	2.	1.	.04
+	2 COMBINED AT	CA07E5	80.	4.13	10.	2.	2.	.05
+	ROUTED TO	RA07E5	78.	4.20	10.	2.	2.	.05
+	HYDROGRAPH AT	A07E.4	64.	4.17	10.	2.	2.	.06
+	5 COMBINED AT	CA07E4	210.	4.20	36.	9.	7.	.26
+	DIVERSION TO	DI7E.4	7.	3.27	1.	0.	0.	.26
+	HYDROGRAPH AT	DI7E.4	210.	4.20	36.	9.	6.	.26
+	3 COMBINED AT	CA07E	223.	4.23	64.	16.	12.	.72
+	DIVERSION TO	DIA07E	113.	4.00	6.	1.	1.	.72
+	HYDROGRAPH AT	DIA07E	223.	4.23	59.	15.	11.	.72
+	ROUTED TO	RA07E	221.	4.30	59.	15.	11.	.72
+	HYDROGRAPH AT	A07C	65.	4.67	13.	3.	2.	.17
+	2 COMBINED AT	CA07C	250.	4.60	69.	17.	13.	.89

+	ROUTED TO	RA07C	249.	4.60	69.	17.	13.	.89
+	HYDROGRAPH AT	A07H	106.	4.20	13.	3.	2.	.09
+	ROUTED TO	RA07H	101.	4.33	13.	3.	2.	.09
+	HYDROGRAPH AT	DA09AI	0.	6.23	0.	0.	0.	.96
+	ROUTED TO	RA09AI	0.	7.00	0.	0.	0.	.96
+	HYDROGRAPH AT	A08B	53.	4.50	11.	3.	2.	.10
+	2 COMBINED AT	CA08B	53.	4.50	11.	3.	2.	.10
+	ROUTED TO	RA08B	49.	5.03	11.	3.	2.	.10
+	HYDROGRAPH AT	A07D	44.	5.23	18.	5.	3.	.23
+	4 COMBINED AT	CA07D	320.	4.40	99.	26.	18.	1.31
+	ROUTED TO	RA07D	315.	4.70	99.	26.	18.	1.31
+	HYDROGRAPH AT	S30D	98.	4.33	18.	4.	3.	.13
+	ROUTED TO	RS30D	92.	4.70	18.	4.	3.	.13
+	HYDROGRAPH AT	S30C	233.	4.53	65.	17.	12.	.45
+	HYDROGRAPH AT	DA09FI	10.	5.03	1.	0.	0.	.37
+	ROUTED TO	RA09FI	4.	6.67	1.	0.	0.	.37
+	3 COMBINED AT	XX1	313.	4.67	83.	21.	15.	.58
+	HYDROGRAPH AT	S30B	128.	5.00	44.	11.	8.	.40
+	2 COMBINED AT	CS30B	396.	4.73	121.	31.	23.	.98
+	DIVERSION TO	DS30BI	0.	4.67	0.	0.	0.	.98
+	HYDROGRAPH AT	DS30BO	396.	4.73	121.	31.	23.	.98
	ROUTED TO							

+		RS30BW	390.	5.03	121.	31.	23.	.98
+	HYDROGRAPH AT	S30A	223.	4.57	64.	16.	12.	.53
+	2 COMBINED AT	CS30A	540.	4.97	174.	45.	33.	1.51
+	DIVERSION TO	DS30AI	25.	4.93	2.	0.	0.	1.51
+	HYDROGRAPH AT	DS30AO	516.	5.00	173.	45.	32.	1.51
+	ROUTED TO	RS30AW	515.	5.13	172.	45.	32.	1.51
+	HYDROGRAPH AT	S30	155.	4.37	34.	9.	6.	.32
+	2 COMBINED AT	CS30	574.	5.03	196.	51.	37.	1.84
+	ROUTED TO	RS30	574.	5.07	196.	51.	37.	1.84
+	HYDROGRAPH AT	A07B	327.	4.33	61.	15.	11.	.65
+	DIVERSION TO	LA07BD	327.	4.33	39.	10.	7.	.65
+	HYDROGRAPH AT	LA07B	208.	4.73	22.	6.	4.	.65
+	3 COMBINED AT	CA07B	777.	5.07	271.	71.	51.	3.80

1

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

						INTERPOLATED TO COMPUTATION INTERVAL			
ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR STORM = 1 STORM AREA (SQ MI) =			.01						
RCBA	MANE	2.00	7.29	256.00	.91	2.00	7.29	256.00	.91

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 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3386E+00 EXCESS= .0000E+00 OUTFLOW= .3386E+00 BASIN STORAGE= .6949E-03 PERCENT ERROR=
-.2

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
              RCBA  MANE         2.00      7.22    256.00       .90      2.00      7.22    256.00         .90

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3348E+00 EXCESS= .0000E+00 OUTFLOW= .3348E+00 BASIN STORAGE= .6918E-03 PERCENT ERROR=
-.2

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
              RCBA  MANE         2.00      3.87    258.00       .70      2.00      3.87    258.00         .70

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2629E+00 EXCESS= .0000E+00 OUTFLOW= .2628E+00 BASIN STORAGE= .7277E-03 PERCENT ERROR=
-.2

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
              RCBA  MANE         2.00      2.64    260.00       .53      2.00      2.64    260.00         .53

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1997E+00 EXCESS= .0000E+00 OUTFLOW= .1996E+00 BASIN STORAGE= .6755E-03 PERCENT ERROR=
-.3

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
              RCBA  MANE         2.00      1.28    262.00       .31      2.00      1.28    262.00         .31

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1150E+00 EXCESS= .0000E+00 OUTFLOW= .1150E+00 BASIN STORAGE= .7026E-03 PERCENT ERROR=
-.6

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
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              RCBB  MANE         2.00     17.16    250.00       .81      2.00     17.16    250.00         .81

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7376E+00 EXCESS= .0000E+00 OUTFLOW= .7377E+00 BASIN STORAGE= .4143E-03 PERCENT ERROR=
-.1

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
              RCBB  MANE         2.00     16.97    250.00       .81      2.00     16.97    250.00         .81

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7298E+00 EXCESS= .0000E+00 OUTFLOW= .7299E+00 BASIN STORAGE= .4124E-03 PERCENT ERROR=
-.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
              RCBB  MANE         2.00      7.17    252.00       .51      2.00      7.17    252.00         .51

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .4608E+00 EXCESS= .0000E+00 OUTFLOW= .4608E+00 BASIN STORAGE= .4020E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
              RCBB  MANE         2.00      3.95    252.00       .36      2.00      3.95    252.00         .36

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .3221E+00 EXCESS= .0000E+00 OUTFLOW= .3220E+00 BASIN STORAGE= .4066E-03 PERCENT ERROR=
-.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
              RCBB  MANE         2.00      1.52    252.00       .25      2.00      1.52    252.00         .25

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2230E+00 EXCESS= .0000E+00 OUTFLOW= .2231E+00 BASIN STORAGE= .4046E-03 PERCENT ERROR=
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-.2

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

R28a	MANE	2.00	30.62	276.00	.71	2.00	30.62	276.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1963E+01 EXCESS= .0000E+00 OUTFLOW= .1943E+01 BASIN STORAGE= .2211E-02 PERCENT ERROR= .9

FOR STORM = 2 STORM AREA (SQ MI) = .50

R28a	MANE	2.00	30.05	276.00	.70	2.00	30.05	276.00	.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1935E+01 EXCESS= .0000E+00 OUTFLOW= .1915E+01 BASIN STORAGE= .2154E-02 PERCENT ERROR= .9

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

R28a	MANE	2.00	20.25	286.00	.55	2.00	20.25	286.00	.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1496E+01 EXCESS= .0000E+00 OUTFLOW= .1483E+01 BASIN STORAGE= .2272E-02 PERCENT ERROR= .7

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

R28a	MANE	2.00	13.02	296.00	.40	2.00	13.02	296.00	.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1096E+01 EXCESS= .0000E+00 OUTFLOW= .1085E+01 BASIN STORAGE= .2135E-02 PERCENT ERROR= .8

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R28a	MANE	2.00	5.45	326.00	.20	2.00	5.45	326.00	.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5514E+00 EXCESS= .0000E+00 OUTFLOW= .5447E+00 BASIN STORAGE= .2373E-02 PERCENT ERROR= .8

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

RCBL	MANE	2.00	106.61	260.00	.88	2.00	106.61	260.00	.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7703E+01 EXCESS= .0000E+00 OUTFLOW= .7704E+01 BASIN STORAGE= .7700E-04 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RCBL	MANE	2.00	104.58	260.00	.86	2.00	104.58	260.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7611E+01 EXCESS= .0000E+00 OUTFLOW= .7612E+01 BASIN STORAGE= .7699E-04 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RCBL	MANE	2.00	74.05	264.00	.71	2.00	74.05	264.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6249E+01 EXCESS= .0000E+00 OUTFLOW= .6248E+01 BASIN STORAGE= .7831E-04 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RCBL	MANE	2.00	51.78	268.00	.55	2.00	51.78	268.00	.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4880E+01 EXCESS= .0000E+00 OUTFLOW= .4880E+01 BASIN STORAGE= .7485E-04 PERCENT ERROR= .0

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FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBL  MANE         2.00     29.11    276.00       .34      2.00     29.11    276.00         .34


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2969E+01 EXCESS= .0000E+00 OUTFLOW= .2968E+01 BASIN STORAGE= .7605E-04 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RCBK  MANE         1.56    140.13    261.55       .83      2.00    138.92    262.00         .83


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9644E+01 EXCESS= .0000E+00 OUTFLOW= .9644E+01 BASIN STORAGE= .3861E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RCBK  MANE         1.56    136.75    262.84       .82      2.00    135.50    262.00         .82


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9525E+01 EXCESS= .0000E+00 OUTFLOW= .9525E+01 BASIN STORAGE= .3915E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBK  MANE         1.78     86.96    265.61       .63      2.00     85.47    266.00         .63


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7285E+01 EXCESS= .0000E+00 OUTFLOW= .7286E+01 BASIN STORAGE= .3911E-03 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RCBK  MANE         2.00     58.22    270.00       .47      2.00     58.22    270.00         .47
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .5466E+01 EXCESS= .0000E+00 OUTFLOW= .5466E+01 BASIN STORAGE= .3940E-03 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBK  MANE         2.00     31.16    280.00       .28      2.00     31.16    280.00         .28


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3241E+01 EXCESS= .0000E+00 OUTFLOW= .3241E+01 BASIN STORAGE= .3815E-03 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R15  MANE         2.00    145.32    264.00       .78      2.00    145.32    264.00         .78


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1021E+02 EXCESS= .0000E+00 OUTFLOW= .1021E+02 BASIN STORAGE= .5258E-03 PERCENT ERROR=
.0


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R15  MANE         2.00    141.82    264.00       .77      2.00    141.82    264.00         .77


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1007E+02 EXCESS= .0000E+00 OUTFLOW= .1007E+02 BASIN STORAGE= .5252E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R15  MANE         2.00     88.32    268.00       .58      2.00     88.32    268.00         .58


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7572E+01 EXCESS= .0000E+00 OUTFLOW= .7572E+01 BASIN STORAGE= .5052E-03 PERCENT ERROR=
.0
```

```
FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R15  MANE         2.00     59.00    272.00       .43      2.00     59.00    272.00         .43


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5649E+01 EXCESS= .0000E+00 OUTFLOW= .5648E+01 BASIN STORAGE= .5341E-03 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R15  MANE         2.00     32.98    282.00       .26      2.00     32.98    282.00         .26


CONTINUITY SUMMARY (AC-FT) - INFLOW= .3373E+01 EXCESS= .0000E+00 OUTFLOW= .3373E+01 BASIN STORAGE= .5116E-03 PERCENT ERROR=
.0


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE1  MANE         2.00     11.95    254.00       .58      2.00     11.95    254.00         .58


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4336E+00 EXCESS= .0000E+00 OUTFLOW= .4343E+00 BASIN STORAGE= .8999E-03 PERCENT ERROR=
-.4


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE1  MANE         2.00     11.79    254.00       .57      2.00     11.79    254.00         .57


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4277E+00 EXCESS= .0000E+00 OUTFLOW= .4284E+00 BASIN STORAGE= .8959E-03 PERCENT ERROR=
-.4


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE1  MANE         2.00      3.44    256.00       .20      2.00      3.44    256.00         .20
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1490E+00 EXCESS= .0000E+00 OUTFLOW= .1491E+00 BASIN STORAGE= .8949E-03 PERCENT ERROR=
-.7


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE1  MANE         2.00      1.11    262.00       .08      2.00      1.11    262.00         .08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5675E-01 EXCESS= .0000E+00 OUTFLOW= .5669E-01 BASIN STORAGE= .8871E-03 PERCENT ERROR=
-1.4


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE1  MANE         2.00       .17    268.00       .03      2.00       .17    268.00         .03


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2450E-01 EXCESS= .0000E+00 OUTFLOW= .2459E-01 BASIN STORAGE= .8667E-03 PERCENT ERROR=
-3.9


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE2  MANE         2.00     10.59    252.00       .68      2.00     10.59    252.00         .68


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5806E+00 EXCESS= .0000E+00 OUTFLOW= .5807E+00 BASIN STORAGE= .4419E-03 PERCENT ERROR=
-.1


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE2  MANE         2.00     10.47    252.00       .67      2.00     10.47    252.00         .67


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5740E+00 EXCESS= .0000E+00 OUTFLOW= .5741E+00 BASIN STORAGE= .4399E-03 PERCENT ERROR=
-.1


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
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```
     RE2  MANE        2.00      4.09    254.00       .33      2.00      4.09    254.00         .33


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2853E+00 EXCESS= .0000E+00 OUTFLOW= .2852E+00 BASIN STORAGE= .4433E-03 PERCENT ERROR=
-.1


     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE2  MANE        2.00      1.92    254.00       .18      2.00      1.92    254.00         .18


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+00 EXCESS= .0000E+00 OUTFLOW= .1495E+00 BASIN STORAGE= .4356E-03 PERCENT ERROR=
-.3


     FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE2  MANE        2.00       .42    260.00       .08      2.00       .42    260.00         .08


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6997E-01 EXCESS= .0000E+00 OUTFLOW= .7000E-01 BASIN STORAGE= .4138E-03 PERCENT ERROR=
-.6


     FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R13  MANE        2.00     74.72    256.00       .63      2.00     74.72    256.00         .63


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2982E+01 EXCESS= .0000E+00 OUTFLOW= .2972E+01 BASIN STORAGE= .1382E-02 PERCENT ERROR=
.3


     FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R13  MANE        2.00     73.83    256.00       .62      2.00     73.83    256.00         .62


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2941E+01 EXCESS= .0000E+00 OUTFLOW= .2931E+01 BASIN STORAGE= .1376E-02 PERCENT ERROR=
```



```
.3


     FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R13  MANE        2.00     29.74    264.00       .30      2.00     29.74    264.00         .30


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1444E+01 EXCESS= .0000E+00 OUTFLOW= .1440E+01 BASIN STORAGE= .1398E-02 PERCENT ERROR=
.2


     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R13  MANE        2.00     14.11    274.00       .18      2.00     14.11    274.00         .18


CONTINUITY SUMMARY (AC-FT) - INFLOW= .8397E+00 EXCESS= .0000E+00 OUTFLOW= .8374E+00 BASIN STORAGE= .1363E-02 PERCENT ERROR=
.1


     FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     R13  MANE        2.00      5.98    298.00       .09      2.00      5.98    298.00         .09


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4278E+00 EXCESS= .0000E+00 OUTFLOW= .4269E+00 BASIN STORAGE= .1430E-02 PERCENT ERROR=
-.1


     FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE3  MANE        2.00     25.27    280.00       .64      2.00     25.27    280.00         .64


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2812E+01 EXCESS= .0000E+00 OUTFLOW= .2813E+01 BASIN STORAGE= .6855E-03 PERCENT ERROR=
.0


     FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE3  MANE        2.00     24.96    280.00       .64      2.00     24.96    280.00         .64
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```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2778E+01 EXCESS= .0000E+00 OUTFLOW= .2778E+01 BASIN STORAGE= .6825E-03 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               RE3  MANE         2.00      9.97    282.00       .28      2.00      9.97    282.00         .28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1227E+01 EXCESS= .0000E+00 OUTFLOW= .1227E+01 BASIN STORAGE= .6757E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE3  MANE         2.00      4.22    284.00       .14      2.00      4.22    284.00         .14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5992E+00 EXCESS= .0000E+00 OUTFLOW= .5992E+00 BASIN STORAGE= .6713E-03 PERCENT ERROR=
-.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE3  MANE         2.00      1.29    288.00       .07      2.00      1.29    288.00         .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2869E+00 EXCESS= .0000E+00 OUTFLOW= .2869E+00 BASIN STORAGE= .6712E-03 PERCENT ERROR=
-.2

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R10  MANE         2.00     53.29    266.00       .62      2.00     53.29    266.00         .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4574E+01 EXCESS= .0000E+00 OUTFLOW= .4565E+01 BASIN STORAGE= .2060E-02 PERCENT ERROR=
.1
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```
          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R10  MANE         2.00     52.73    266.00       .62      2.00     52.73    266.00         .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4513E+01 EXCESS= .0000E+00 OUTFLOW= .4504E+01 BASIN STORAGE= .2051E-02 PERCENT ERROR=
.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R10  MANE         2.00     24.52    278.00       .29      2.00     24.52    278.00         .29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2096E+01 EXCESS= .0000E+00 OUTFLOW= .2091E+01 BASIN STORAGE= .1717E-02 PERCENT ERROR=
.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R10  MANE         2.00     13.40    290.00       .16      2.00     13.40    290.00         .16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1152E+01 EXCESS= .0000E+00 OUTFLOW= .1150E+01 BASIN STORAGE= .1821E-02 PERCENT ERROR=
.1

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R10  MANE         2.00      6.03    314.00       .08      2.00      6.03    314.00         .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6018E+00 EXCESS= .0000E+00 OUTFLOW= .6005E+00 BASIN STORAGE= .1827E-02 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               RE4  MANE         2.00     10.89    276.00       .59      2.00     10.89    276.00         .59
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1256E+01 EXCESS= .0000E+00 OUTFLOW= .1257E+01 BASIN STORAGE= .1691E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RE4	MANE	2.00	10.74	276.00	.58	2.00	10.74	276.00	.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1239E+01 EXCESS= .0000E+00 OUTFLOW= .1239E+01 BASIN STORAGE= .1675E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RE4	MANE	2.00	3.54	278.00	.21	2.00	3.54	278.00	.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4515E+00 EXCESS= .0000E+00 OUTFLOW= .4515E+00 BASIN STORAGE= .1219E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RE4	MANE	2.00	1.25	282.00	.09	2.00	1.25	282.00	.09

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1934E+00 EXCESS= .0000E+00 OUTFLOW= .1934E+00 BASIN STORAGE= .1158E-03 PERCENT ERROR= -.1

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RE4	MANE	2.00	.45	286.00	.05	2.00	.45	286.00	.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1050E+00 EXCESS= .0000E+00 OUTFLOW= .1050E+00 BASIN STORAGE= .1060E-03 PERCENT ERROR= -.1

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

R9	MANE	1.62	43.15	255.24	.63	2.00	42.40	254.00	.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3100E+01 EXCESS= .0000E+00 OUTFLOW= .3101E+01 BASIN STORAGE= .7915E-04 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

R9	MANE	1.62	41.98	254.43	.62	2.00	41.09	256.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3051E+01 EXCESS= .0000E+00 OUTFLOW= .3052E+01 BASIN STORAGE= .8972E-04 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

R9	MANE	2.00	21.71	264.00	.30	2.00	21.71	264.00	.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1470E+01 EXCESS= .0000E+00 OUTFLOW= .1471E+01 BASIN STORAGE= .7899E-04 PERCENT ERROR= -.1

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

R9	MANE	2.00	12.14	276.00	.18	2.00	12.14	276.00	.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8818E+00 EXCESS= .0000E+00 OUTFLOW= .8822E+00 BASIN STORAGE= .7919E-04 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R9	MANE	2.00	5.57	300.00	.11	2.00	5.57	300.00	.11

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5188E+00 EXCESS= .0000E+00 OUTFLOW= .5191E+00 BASIN STORAGE= .7764E-04 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               R7  MANE         2.00     43.65    258.00       .62      2.00     43.65    258.00         .62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3964E+01 EXCESS= .0000E+00 OUTFLOW= .3966E+01 BASIN STORAGE= .1248E-03 PERCENT ERROR=
-.1

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R7  MANE         2.00     45.14    258.00       .61      2.00     45.14    258.00         .61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3900E+01 EXCESS= .0000E+00 OUTFLOW= .3902E+01 BASIN STORAGE= .1284E-03 PERCENT ERROR=
-.1

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R7  MANE         2.00     23.45    268.00       .30      2.00     23.45    268.00         .30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1919E+01 EXCESS= .0000E+00 OUTFLOW= .1920E+01 BASIN STORAGE= .1220E-03 PERCENT ERROR=
-.1

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R7  MANE         2.00     13.11    280.00       .18      2.00     13.11    280.00         .18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1147E+01 EXCESS= .0000E+00 OUTFLOW= .1148E+01 BASIN STORAGE= .1276E-03 PERCENT ERROR=
.0

          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
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               R7  MANE         2.00      6.18    304.00       .10      2.00      6.18    304.00         .10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6276E+00 EXCESS= .0000E+00 OUTFLOW= .6278E+00 BASIN STORAGE= .1251E-03 PERCENT ERROR=
-.1

          FOR STORM = 1  STORM AREA (SQ MI) =        .01
              RS1  MANE         2.00    719.21    322.00       .79      2.00    719.21    322.00         .79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1236E+03 EXCESS= .0000E+00 OUTFLOW= .1236E+03 BASIN STORAGE= .3686E-02 PERCENT ERROR=
.0

          FOR STORM = 2  STORM AREA (SQ MI) =        .50
              RS1  MANE         2.00    709.59    322.00       .78      2.00    709.59    322.00         .78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1221E+03 EXCESS= .0000E+00 OUTFLOW= .1221E+03 BASIN STORAGE= .3679E-02 PERCENT ERROR=
.0

          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
              RS1  MANE         2.00    478.60    336.00       .56      2.00    478.60    336.00         .56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8763E+02 EXCESS= .0000E+00 OUTFLOW= .8763E+02 BASIN STORAGE= .3620E-02 PERCENT ERROR=
.0

          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
              RS1  MANE         2.00    345.22    348.00       .42      2.00    345.22    348.00         .42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6592E+02 EXCESS= .0000E+00 OUTFLOW= .6592E+02 BASIN STORAGE= .3610E-02 PERCENT ERROR=
```

.0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS1	MANE	2.00	210.32	368.00	.28	2.00	210.32	368.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4449E+02 EXCESS= .0000E+00 OUTFLOW= .4450E+02 BASIN STORAGE= .3611E-02 PERCENT ERROR=
.0

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

RS2	MANE	1.02	719.11	322.18	.79	2.00	719.06	322.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1242E+03 BASIN STORAGE= .5490E-03 PERCENT ERROR=
.0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RS2	MANE	1.03	709.34	322.51	.78	2.00	709.25	322.00	.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1227E+03 EXCESS= .0000E+00 OUTFLOW= .1227E+03 BASIN STORAGE= .5476E-03 PERCENT ERROR=
.0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RS2	MANE	1.16	478.54	337.90	.56	2.00	478.50	338.00	.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8800E+02 EXCESS= .0000E+00 OUTFLOW= .8800E+02 BASIN STORAGE= .5378E-03 PERCENT ERROR=
.0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RS2	MANE	1.29	345.03	348.39	.42	2.00	344.79	348.00	.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6613E+02 EXCESS= .0000E+00 OUTFLOW= .6613E+02 BASIN STORAGE= .5506E-03 PERCENT ERROR=
.0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS2	MANE	1.50	210.31	370.54	.28	2.00	210.29	370.00	.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4456E+02 EXCESS= .0000E+00 OUTFLOW= .4456E+02 BASIN STORAGE= .5417E-03 PERCENT ERROR=
.0

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

RHV2	MANE	2.00	3.17	324.00	.87	2.00	3.17	324.00	.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1441E+01 EXCESS= .0000E+00 OUTFLOW= .1441E+01 BASIN STORAGE= .5691E-03 PERCENT ERROR=
.0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RHV2	MANE	2.00	3.14	324.00	.86	2.00	3.14	324.00	.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1429E+01 EXCESS= .0000E+00 OUTFLOW= .1429E+01 BASIN STORAGE= .5643E-03 PERCENT ERROR=
.0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RHV2	MANE	2.00	2.29	326.00	.66	2.00	2.29	326.00	.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1083E+01 EXCESS= .0000E+00 OUTFLOW= .1083E+01 BASIN STORAGE= .5953E-03 PERCENT ERROR=
-.1

```
FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RHV2  MANE         2.00      1.74    334.00       .52      2.00      1.74    334.00         .52


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .8660E+00 EXCESS= .0000E+00 OUTFLOW= .8660E+00 BASIN STORAGE= .5721E-03 PERCENT ERROR=
-.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RHV2  MANE         2.00      1.25    342.00       .40      2.00      1.25    342.00         .40


 CONTINUITY SUMMARY (AC-FT) - INFLOW= .6627E+00 EXCESS= .0000E+00 OUTFLOW= .6627E+00 BASIN STORAGE= .5814E-03 PERCENT ERROR=
-.1



 *** NORMAL END OF HEC-1 ***
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Appendix J

DCR Existing Conditions 100 Year-
6 Hour HEC-1 Output

```
1*************************************
**************************************
 *                                  *                                                    *
  *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                               *    U.S. ARMY CORPS OF ENGINEERS
  *
 *              JUN   1998              *                                                *    HYDROLOGIC ENGINEERING
CENTER    *
 *            VERSION 4.1               *                                                *          609 SECOND STREET
  *
 *                                      *                                                *        DAVIS, CALIFORNIA 95616
  *
 *  RUN DATE   02JUN10  TIME  13:42:46  *                                                *           (916) 756-1104
  *
 *                                      *                                                *
  *
 *************************************
**************************************
```

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

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

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

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1                                                HEC-1 INPUT                                                          PAGE  1

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

             1          ID   Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 100 Years
             2          ID                                                                                  **
             3          ID   107th Avenue and Union Hills Drive Design Concept Report                       **
             4          ID                                                                              **

             5          ID   PROJECT NO.: FCD 2009C036                        G&M: 10388A                    **

             6          ID                                                                              **

             7          ID   Original HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                   **
             8          ID                         100-Year 6-Hour HEC-1 Model for Existing Conditions **
             9          ID   Modified HEC-1 Model: DCR100-6.DAT, Goodwin & Marshall, Inc., May 29, 2010**
            10          ID                         100-Year 6-Hour HEC-1 Model for Existing Conditions **
            11          ID                                                                              **

            12          ID   1) NOAA2 Rainfall Data                                                     **
```



```
            13          ID   2) DDMSW V3.5.7 Used                                                        **

            14          ID                                                                              **

            15          ID   ***********************************************************************
            16          ID   Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 100 Years
            17          ID                                                                                  **
            18          ID   Glendale/Peoria ADMP Northwest Region Update                                   **
            19          ID   Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006                  **
            20          ID                         REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS               **
            21          ID   Modified HEC-1 Model: EC06BASE.DAT, Wood/Patel, SZ, May 2007                   **
            22          ID                         100-Year 6-Hour HEC-1 Model for Existing Conditions **
            23          ID   1) NOAA 2 Rainfall Data                                                        **
            24          ID   2) DDMSW MCUHP1 V3.3.2 Used                                                    **
            25          ID                                                                                  **
            26          ID   ***********************************************************************
                        *
            27          ID   ***********************************************************************
            28          ID   **                                                                           **
            29          ID   ** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS      **
            30          ID   ** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY                 **
            31          ID   ** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005            **
            32          ID   ** THIS IS THE PREFERRED ALTERNATIVE MODEL                                   **
            33          ID   ** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS             **
            34          ID   ** USING LATEST SURVEY DATA.                                                 **
            35          ID   ***********************************************************************
                        *
            36          ID   ***********************************************************************
            37          ID   **                                                                           **
            38          ID   **                    Glendale/Peoria ADMP Update                            **
            39          ID   **                                                                           **
            40          ID   ***********************************************************************
            41          ID   ***********************************************************************
            42          ID   PROJECT:                Glendale Peoria ADMP Update
            43          ID   CLIENT:                 Flood Control District of Maricopa County
            44          ID   PREPARED BY:            Entellus, Inc.
            45          ID   PROJECT No:             FCD 99-44          Entellus 310.017
            46          ID   FILE NAME: LEVEL3.DAT                CREATED DATE: JUNE 6, 2001
            47          ID   STORM:                  100-year 6-hour Storm
            48          ID   DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY
            49          ID
                        *
                        * ***********************************************************************
            50          IT       2                    1000
            51          IO       5
1                                                HEC-1 INPUT                                                          PAGE  2

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

            52          IN      15
                        *
                        *DIAGRAM
                        *
            53          JD    3.20    0.01
            54          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
            55          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
            56          PC   0.962   0.972   0.983   0.991   1.000
            57          JD   3.179    0.50
            58          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
            59          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
            60          PC   0.962   0.972   0.983   0.991   1.000
            61          JD   3.120    2.80
            62          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
            63          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
```

```
 64   PC   0.950   0.963   0.975   0.988   1.000
 65   JD   2.950    16.0
 66   PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 67   PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 68   PC   0.946   0.960   0.973   0.987   1.000
 69   JD   2.598    90.0
 70   PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 71   PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 72   PC   0.927   0.945   0.964   0.982   1.000
      *
      * ******************************************************************************
      *
      * The Following Portion Came from the HEC-1 Model for the Tierra Del Rio
      * Development.  Model CREATED BY A. MERCIER, CMX, ON 01/16/04
      * FILE NAME: TDR6DC.DAT
      *
      * ******************************************************************************
      *

 73   KK     CBA   BASIN
 74   BA   0.007
 75   KM   SUB-BASIN CBA
 76   LG    0.34    0.35    6.80    0.13      11
 77   UC   0.182   0.219
 78   UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 79   UA     100
      *

 80   KK    RCBA
 81   KM   CHANNEL ROUTING
 82   RD    1479   .0095    .030            TRAP       0       4
      *

 83   KK     P28   BASIN
 84   KM   SUB-BASIN P28
 85   BA   0.027
 86   LG    0.25    0.13   10.10    0.04      29
 87   UC   0.337   0.331
 88   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 89   UA     100
      *
1                                        HEC-1 INPUT                                        PAGE  3

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

 90   KK    CP28
 91   KM
 92   HC       2
      *

 93   KK    DT28
 94   KM
 95   DT    DB28   1.230
 96   DI       0     100     500    1000    5000
 97   DQ       0     100     500    1000    5000
      *

 98   KK     CBB   BASIN
 99   KM   SUB-BASIN CBB
100   BA   0.017
101   LG    0.34    0.34    4.55    0.35      15
102   UC   0.195   0.156
103   UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
104   UA     100
      *

105   KK    RCBB
106   KM   CHANNEL ROUTING
107   RD    1231   .0244    .030            TRAP       0       4
      *

108   KK   CP28a
109   KM
110   HC       2
      *

111   KK    R28a
112   KM   CHANNEL ROUTING
113   RD    1642   .0018    .030            TRAP      10       4
      *

114   KK     P27   BASIN
115   KM   SUB-BASIN P27
116   BA   0.065
117   LG    0.25    0.15    8.00    0.10      30
118   UC   0.423   0.443
119   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
120   UA     100
      *

121   KK    DT27
122   KM
123   DT    DB27   1.360
124   DI       0     100     500    1000    5000
125   DQ       0     100     500    1000    5000
      *
1                                        HEC-1 INPUT                                        PAGE  4

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

126   KK    CP27
127   KM
128   HC       2
      *

129   KK    P27A   BASIN
130   KM   SUB-BASIN P27A
131   BA   0.008
132   LG    0.25    0.25    4.35    0.46      44
133   UC   0.235   0.295
134   UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
135   UA     100
      *

136   KK   DT27a
137   KM
138   DT   DB27a   0.210
139   DI       0     100     500    1000    5000
140   DQ       0     100     500    1000    5000
      *

141   KK    P27B   BASIN
142   KM   SUB-BASIN P27B
143   BA   0.013
144   LG    0.26    0.26    5.00    0.32      37
145   UC   0.260   0.346
```

```
146        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
147        UA     100
           *

148        KK   DT27b
149        KM
150        DT   DB27b   0.250
151        DI       0     100     500    1000    5000
152        DQ       0     100     500    1000    5000
           *

153        KK     CBL   BASIN
154        KM  SUB-BASIN CBL
155        BA   0.028
156        LG    0.28    0.29    5.70    0.23      24
157        UC   0.276   0.301
158        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
159        UA     100
           *

160        KK    CCBL
161        KM
162        HC       4
           *
```



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

163        KK    RCBL
164        KM  NATURAL WASH ROUTING
165        RC   0.035   0.035   0.035     840   .0227
166        RX       0     7.5      15      50      60      95   102.5     110
167        RY       5     2.5       0       0       0       0     2.5       5
           *

168        KK     CBK   BASIN
169        KM  SUB-BASIN CBK
170        BA   0.052
171        LG    0.34    0.34    4.65    0.33       6
172        UC   0.277   0.207
173        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
174        UA     100
           *

175        KK    CCBK
176        KM
177        HC       2
           *

178        KK    RCBK
179        KM  CHANNEL ROUTING
180        RD     755   .0238    .030            TRAP      10       4
           *

181        KK     P14   BASIN
182        KM  SUB-BASIN P14
183        BA   0.008
184        LG    0.34    0.34    3.81    0.53       2
185        UC   0.234   0.183
186        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
187        UA     100
           *
```



```
188        KK    RT14
189        KM
190        DT    RB14   1.130
191        DI       0     100     500    1000    5000
192        DQ       0     100     500    1000    5000
           *

193        KK    CP14
194        KM
195        HC       2
           *

196        KK     P15   BASIN
197        KM  SUB-BASIN P15
198        BA   0.006
199        LG    0.33    0.34    3.23    0.81       5
200        UC   0.436   0.564
201        UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
202        UA     100
           *
```



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

203        KK    DT15
204        KM
205        DT    DB15   0.260
206        DI       0     100     500    1000    5000
207        DQ       0     100     500    1000    5000
           *

208        KK     CBJ   BASIN
209        KM  SUB-BASIN CBJ
210        BA   0.015
211        LG    0.35    0.35    4.30    0.41      10
212        UC   0.227   0.241
213        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
214        UA     100
           *

215        KK    CP15
216        KM
217        HC       3
           *

218        KK     R15
219        KM  CHANNEL ROUTING
220        RD     800   .0125    .030            TRAP      10       4
           *

221        KK     CBH   BASIN
222        KM  SUB-BASIN CBH
223        BA   0.012
224        LG    0.35    0.35    4.40    0.38      15
225        UC   0.156   0.100
226        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
227        UA     100
           *
           * Route CBH to P25S
           *

228        KK    RCBH
229        RS       2    FLOW       0
```

```
230          RC    0.02     .02     .02    1500   .0055
231          RX     280     320     340     350     360     370     390     430
232          RY       6       4       2       0       0       2       4       6
             *

233          KK    P25S   BASIN
234          KM  SUB-BASIN P25S
235          BA   0.028
236          LG    0.35    0.35    4.35    0.40      15
237          UC   0.480   0.415
238          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
239          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE  7
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

240          KK   CP25S
241          KM
242          HC       2
             *

243          KK    AFR0
244          KM  Dummy Combination at Jomax Road and AFR
245          HC       2
             *
             * ***********************************************************************

246          KK      E1   BASIN
247          KM  SUB-BASIN E1
248          BA   0.014
249          LG    0.33    0.32    3.95    0.48       2
250          UC   0.205   0.142
251          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
252          UA     100
             *

253          KK     RE1
254          KM  CHANNEL ROUTING
255          RD    1993   .0376    .030            TRAP      10       4
             *

256          KK      E2   BASIN
257          KM  SUB-BASIN E2
258          BA   0.016
259          LG    0.30    0.25    3.95    0.48       5
260          UC   0.288   0.271
261          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
262          UA     100
             *

263          KK     RE2
264          KM  CHANNEL ROUTING
265          RD    1108   .0542    .030            TRAP      10       4
             *

266          KK     P13   BASIN
267          KM  SUB-BASIN P13
268          BA   0.059
269          LG    0.26    0.25    3.92    0.57      27
270          UC   0.313   0.195
271          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
272          UA     100
```



```
             *

273          KK    DT13
274          KM
275          DT    DB13   1.060
276          DI       0     100     500    1000    5000
277          DQ       0     100     500    1000    5000
             *
1                                          HEC-1 INPUT                                          PAGE  8
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

278          KK    CP13
279          KM
280          HC       3
             *

281          KK     R13
282          KM  CHANNEL ROUTING
283          RD    1412   .0035    .025            TRAP      10       4
             *

284          KK     P12   BASIN
285          KM  SUB-BASIN P12
286          BA   0.044
287          LG    0.25    0.26    3.58    0.71      30
288          UC   0.426   0.316
289          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
290          UA     100
             *

291          KK    DT12
292          KM
293          DT    DB12   1.140
294          DI       0     100     500    1000    5000
295          DQ       0     100     500    1000    5000
             *

296          KK    CP12
297          KM
298          HC       2
             *

299          KK      E3   BASIN
300          KM  SUB-BASIN E3
301          BA   0.082
302          LG    0.31    0.28    3.95    0.48       4
303          UC   0.589   0.591
304          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
305          UA     100
             *

306          KK     RE3
307          KM  CHANNEL ROUTING
308          RD    1473   .0339    .030            TRAP      10       4
             *

309          KK     P10   BASIN
310          KM  SUB-BASIN P10
311          BA   0.055
312          LG    0.25    0.26    3.78    0.63      29
313          UC   0.409   0.251
314          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```

```
 315          UA     100
              *
1                                        HEC-1 INPUT                                                    PAGE  9
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 316          KK    DT10
 317          KM
 318          DT    DB10   1.080
 319          DI       0     100     500    1000    5000
 320          DQ       0     100     500    1000    5000
              *

 321          KK    CP10
 322          KM
 323          HC       2
              *

 324          KK     R10
 325          KM  CHANNEL ROUTING
 326          RD    1947   .0035    .025            TRAP      10       4
              *

 327          KK     P11   BASIN
 328          KM  SUB-BASIN P11
 329          BA   0.042
 330          LG    0.25    0.25    3.85    0.60      30
 331          UC   0.671   0.682
 332          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 333          UA     100
              *

 334          KK    DT11
 335          KM
 336          DT    DB11   1.200
 337          DI       0     100     500    1000    5000
 338          DQ       0     100     500    1000    5000
              *

 339          KK    CP11
 340          KM
 341          HC       2
              *

 342          KK      E4   BASIN
 343          KM  SUB-BASIN E4
 344          BA   0.040
 345          LG    0.34    0.33    4.00    0.47       3
 346          UC   0.528   0.655
 347          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 348          UA     100
              *

 349          KK     RE4
 350          KM  CHANNEL ROUTING
 351          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 352          RD
 353          RC    .015    .015    .015    1287   .0250
 354          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 355          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *
1                                        HEC-1 INPUT                                                    PAGE 10
```



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

 356          KK      P9   BASIN
 357          KM  SUB-BASIN P9
 358          BA   0.045
 359          LG    0.25    0.25    3.92    0.57      30
 360          UC   0.315   0.283
 361          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 362          UA     100
              *

 363          KK     DT9
 364          KM
 365          DT     DB9   0.920
 366          DI       0     100     500    1000    5000
 367          DQ       0     100     500    1000    5000
              *

 368          KK     HV1   BASIN
 369          KM  SUB-BASIN HV1
 370          BA   0.007
 371          LG    0.27    0.29    3.95    0.55      25
 372          UC   0.410   0.888
 373          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
 374          UA     100
              *

 375          KK     CP9
 376          KM
 377          HC       3
              *

 378          KK      R9
 379          KM  CHANNEL ROUTING
 380          KM  SHAPE REFLECTS CURRENT SET OF PLANS FOR HAPPY VALLEY ROAD DITCH
 381          RD
 382          RC    .015    .015    .015     940   .0250
 383          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
 384          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
              *

 385          KK      P8   BASIN
 386          KM  SUB-BASIN P8
 387          BA   0.013
 388          LG    0.25    0.25    4.15    0.52      30
 389          UC   0.508   0.595
 390          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 391          UA     100
              *

 392          KK     DT8
 393          KM
 394          DT     DB8   0.300
 395          DI       0     100     500    1000    5000
 396          DQ       0     100     500    1000    5000
              *
1                                        HEC-1 INPUT                                                    PAGE 11
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 397          KK      P7   BASIN
 398          KM  SUB-BASIN P7
```

```
399          BA   0.014
400          LG    0.25    0.25    3.95    0.56      30
401          UC   0.458   0.528
402          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
403          UA     100
             *

404          KK     DT7
405          KM
406          DT     DB7   0.300
407          DI       0     100     500    1000    5000
408          DQ       0     100     500    1000    5000
             *

409          KK     CP7
410          KM
411          HC       3
             *

412          KK      R7
413          KM  CHANNEL ROUTING
414          RD
415          RC    .015    .015    .015    1488   .0250
416          RX       0       2       4    9.84   12.84   15.84   21.84   27.56
417          RY    2.46    1.96    1.46       0     0.5       1       2    2.95
             *

418          KK      P6   BASIN
419          KM  SUB-BASIN P6
420          BA   0.070
421          LG    0.25    0.25    4.25    0.49      30
422          UC   0.899   1.126
423          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
424          UA     100
             *

425          KK     DT6
426          KM
427          DT     DB6   1.760
428          DI       0     100     500    1000    5000
429          DQ       0     100     500    1000    5000
             *

430          KK     CP6
431          KM
432          HC       2
             *
```



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

433          KK   HPVLY
434          KM
435          HC       3
             *
             *
             * ******************************************************************************
             *
             *

436          KK   A11MA   BASIN
437          KM  SUB-BASIN A11M North Portion
438          BA   0.073
```



```
439          LG    0.32    0.24    8.80    0.06       8
440          UC   0.258   0.117
441          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
442          UA     100
             *
             * On-site Retention Basin
             *

443          KK  A11MAQ
444          DT  DA11MA     3.4
445          DI       0     100    1000    1000
446          DQ       0     100    1000    1000
             *
             *
             *

447          KK  SA11MA STORAGE
448          KM  Online Detention Basin,  6.2 ac-ft.
449          RS       1    STOR       0
450          SV       0     1.5     2.5     4.0     6.2    10.0
451          SE       0       2       3       4       5       6
452          SL       0    3.14    0.62     0.5
453          SS       5      50     2.7     1.5
             *
             * ROUTE RA11MA IS 2000 FT WITH A SLOPE OF .0092
             * CROSS SECTION IS A SMALL NATURAL CHANNEL
             *

454          KK  RA11MA
455          RS       9    FLOW       0
456          RC    0.05    0.06    0.05    2000   .0092
457          RX       0     350     450     480     482     510     610     910
458          RY       7       6       5       1       0       5       6       7
             *

459          KK   A11MB   BASIN
460          KM  SUB-BASIN A11M South Portion
461          BA   0.194
462          LG    0.25    0.15    8.80    0.07      29
463          UC   0.393   0.167
464          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
465          UA     100
             *
             * On-site Retention Basin
             *      GP
```



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

466          KK  A11MBQ
467          DT  DA11MB     3.6
468          DI       0     100    1000    1000
469          DQ       0     100    1000    1000
             *

470          KK  SA11MB STORAGE
471          KM  Online Detention Basin, 11.2 ac-ft.
472          RS       1    STOR       0
473          SV       0     3.0     5.5     8.0    11.2    15.0
474          SE       0       2       3       4       5       6
475          SL       0    3.14    0.62     0.5
476          SS       5     200     2.7     1.5
             *
```

```
477          KK   A11NA   BASIN
478          KM  SUB-BASIN A11N - Revised
479          BA   0.076
480          LG    0.29    0.30    5.40    0.25      26
481          UC   0.237   0.134
482          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
483          UA     100
             *

484          KK  SA11NA STORAGE
485          KM  Online Detention Basin,  7.3 ac-ft.
486          RS       1    STOR       0
487          SV       0     1.0     3.0     5.0     7.3    11.0
488          SE       0       2       3       4       5       6
489          SL       0    3.14    0.62     0.5
490          SS       5     100     2.7     1.5
             *

491          KK  RA11NA
492          RS      11    FLOW       0
493          RC    0.05    0.06    0.05    2400  0.0090
494          RX       0     350     450     480     482     510     610     910
495          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE Flows of A11NA, A11MA AND A11MB
             *

496          KK  CA11MB
497          HC       3
             *
             * Route Flow to A11J
             *

498          KK  RA11MB
499          RS       8    FLOW       0
500          RC    0.05    0.06    0.05    3000   .0085
501          RX       0     350     450     480     482     510     610     910
502          RY       7       6       5       1       0       5       6       7
             *
```



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

503          KK    A11O   BASIN
504          KM  SUBASIN A11O
505          BA   0.056
506          LG    0.28    0.27    6.20    0.19      23
507          UC   0.279   0.249
508          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
509          UA     100
             *

510          KK   SA11O STORAGE
511          KM  Online Detention Basin,  3.1 ac-ft.
512          RS       1    STOR       0
513          SV       0     0.5     1.0     2.0     3.1     5.0
514          SE       0       2       3       4       5       6
515          SL       0    3.14    0.62     0.5
516          SS       5      50     2.7     1.5
             *
             * ROUTE A11O to A11KB
             *
```



```
517          KK   RA11O
518          RS       9    FLOW       0
519          RC    0.05     .06     .05    2500   .0085
520          RX       0     350     450     480     482     510     610     910
521          RY       7       6       5       1       0       5       6       7
             *

522          KK   A11KB   BASIN
523          KM  SUB-BASIN A11K North Portion
524          BA   0.107
525          LG    0.25    0.25    4.70    0.36      30
526          UC   0.390   0.206
527          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
528          UA     100
             *

529          KK  SA11KB STORAGE
530          KM  Online Detention Basin, 10.7 ac-ft.
531          RS       1    STOR       0
532          SV       0     3.0     5.0     7.0    10.7    15.0
533          SE       0       2       3       4       5       6
534          SL       0    3.14    0.62     0.5
535          SS       5     100     2.7     1.5
             *

536          KK   A11KA   BASIN
537          KM  SUB-BASIN A11K East Portion
538          BA   0.081
539          LG    0.27    0.27    4.45    0.42      42
540          UC   0.272   0.190
541          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
542          UA     100
             *
```



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

543          KK  SA11KA STORAGE
544          KM  Online Detention Basin,  9.6 ac-ft.
545          RS       1    STOR       0
546          SV       0     2.0     4.0     6.0     9.6    14.0
547          SE       0       2       3       4       5       6
548          SL       0    3.14    0.62     0.5
549          SS       5      50     2.7     1.5
             *
             * ROUTE A11KA to A11KB
             *

550          KK  RA11KA
551          RS       8    FLOW       0
552          RC    0.05     .06     .05    2000   .0075
553          RX       0     350     450     480     482     510     610     910
554          RY       7       6       5       1       0       5       6       7
             *
             * COMBINE A11KB,A11KA AND A11O
             *

555          KK  CA11KB
556          HC       3
             *
             * ROUTE Flow of CA11KB to A11KC
             *
```

```
557          KK  RA11KB
558          RS       8    FLOW       0
559          RC    0.05    0.06    0.05    1600  0.0055
560          RX       0      50     250     350     360     420     620     720
561          RY      10       8       6       2       0       6       8      10
             *

562          KK    A11G   BASIN
563          KM  SUB-BASIN A11G
564          BA   0.060
565          LG    0.31    0.28    4.55    0.35      25
566          UC   0.425   0.369
567          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
568          UA     100
             *
             * ROUTE A11G to A11KC
             *

569          KK  RA11GN
570          RS       7    FLOW       0
571          RC    0.05     .06     .05    2300   0.010
572          RX       0     350     450     480     482     510     610     910
573          RY       7       6       5       1       0       5       6       7
             *
1                                                HEC-1 INPUT                                                    PAGE 16

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

574          KK   A11KC   BASIN
575          KM  SUB-BASIN A11K West Portion
576          BA   0.132
577          LG    0.27    0.26    4.15    0.50      27
578          UC   0.381   0.185
579          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
580          UA     100
             *

581          KK  SA11KC STORAGE
582          KM  Online Detention Basin,  6.4 ac-ft.
583          RS       1    STOR       0
584          SV       0     1.5     2.5     4.0     6.4    10.0
585          SE       0       2       3       4       5       6
586          SL       0    3.14    0.62     0.5
587          SS       5      50     2.7     1.5
             *
             * COMBINE RA11KB, RA11G, AND A11KC
             *

588          KK  CA11KC
589          HC       3
             *
             * ROUTE CA11KC to A11J
             * CROSS SECTION IS A MEDIUM NATURAL CHANNEL
             *

590          KK  RA11KC
591          RS       4    FLOW       0
592          RC    0.05     .06     .05    1000   .0055
593          RX       0      50     250     350     360     420     620     720
594          RY      10       8       6       2       0       6       8      10
             *
```



```
595          KK    A11J   BASIN
596          KM  SUB-BASIN A11J
597          BA   0.112
598          LG    0.29    0.22    7.30    0.12      18
599          UC   0.579   0.448
600          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
601          UA     100
             *

602          KK   SA11J STORAGE
603          KM  Online Detention Basin,  4.4 ac-ft.
604          RS       1    STOR       0
605          SV       0     1.0     2.0     3.0     4.4     7.0
606          SE       0       2       3       4       5       6
607          SL       0    3.14    0.62     0.5
608          SS       5      50     2.7     1.5
             *
             * COMBINE Flows of RA11MB, A11J, AND RA11KC
             *
1                                                HEC-1 INPUT                                                    PAGE 17

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

609          KK   CA11J
610          HC       3
             *

611          KK    A11L   BASIN
612          KM  SUB-BASIN A11L
613          BA   0.264
614          LG    0.27    0.12   11.20    0.03      24
615          UC   0.704   0.514
616          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
617          UA     100
             *
             * On-site Retention Basin
             *     GP

618          KK  DA11LQ
619          DT   DA11L     7.6
620          DI       0     100    1000    1000
621          DQ       0     100    1000    1000
             *
             * ROUTE FLOW TO A11I FROM A11L                                                          G
             *

622          KK   RA11L
623          RS       9    FLOW       0
624          RC    0.05    0.06    0.05    2600   .0069
625          RX       0     350     450     480     482     510     610     910
626          RY       7       6       5       1       0       5       6       7
             *

627          KK    A11I   BASIN
628          KM  SUB-BASIN A11I
629          BA   0.153
630          LG    0.25    0.10   11.20    0.03      28
631          UC   0.516   0.325
632          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
633          UA     100
             *
             * On-site Retention Basin
             *
```

```
634          KK  DA11IQ
635          DT   DA11I    11.7
636          DI       0     100    1000    1000
637          DQ       0     100    1000    1000
             *
             * COMBINE Flows of CA11J, A11I, and RA11L
             *
1                                    HEC-1 INPUT                                                    PAGE 18

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

638          KK   CA11I
639          HC       3
             *
             * ROUTE FLOW TO A11EB FROM CA11I
             *

640          KK   RA11I
641          RS       9    FLOW       0
642          RC    0.05     .06     .05    4000   .0075
643          RX       0      50     100     150     180     230     280     330
644          RY      10       8       6       0       0       6       8      10
             *

645          KK   A11EA   BASIN
646          KM  SUB-BASIN A11E East Portion
647          BA   0.144
648          LG    0.33    0.31    4.30    0.41      11
649          UC   0.596   0.537
650          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
651          UA     100
             *
             * ROUTE FLOW TO A11EB FROM A11EA
             *

652          KK  RA11EA
653          RS       6    FLOW       0
654          RC    0.05     .06     .05    1500   .0065
655          RX       0      50     250     320     360     420     620     720
656          RY      10       8       6       0       0       6       8      10
             *

657          KK   A11EB   BASIN
658          KM  SUB-BASIN A11E West Portion
659          BA   0.190
660          LG    0.34    0.34    4.45    0.38       4
661          UC   0.834   0.835
662          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
663          UA     100
             *
             * COMBINE Flows of A11EA, A11EB, and RA11I
             *

664          KK  CA11EB
665          HC       3
             *

666          KK      41   BASIN
667          KM  SUB-BASIN 41
668          BA   0.054
669          LG    0.34    0.34    4.40    0.39      21
670          UC   0.249   0.168
```



```
671          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
672          UA     100
             *
1                                    HEC-1 INPUT                                                    PAGE 19

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

673          KK     B41
674          KM  Storage Route Runoff through Detention Basin @41
675          KM  Outlet Structure:  1-48" PIPE
676          RS       1    STOR       0
677          SA     .09     .18     .27      .4
678          SE    1433    1435    1437    1440
679          SQ       0      23      71     132
             *

680          KK      42   BASIN
681          KM  SUB-BASIN 42
682          BA   0.075
683          LG    0.35    0.35    4.25    0.42      44
684          UC   0.259   0.180
685          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
686          UA     100
             *

687          KK     B42
688          KM  Storage Route Runoff through Detention Basin @42
689          KM  Outlet Structure:  48" PIPE
690          RS       1    STOR       0
691          SA     .07     .13     .21     .31      .4
692          SE    1427    1429    1431    1433    1435
693          SQ       0      23      71     112     147
             *
             * COMBINE Flows of 41 and 42                                                            G
             *

694          KK     C41
695          HC       2
             *
             * ROUTE FLOW TO A11F FROM C41
             *

696          KK    RC41
697          RS      14    FLOW       0
698          RC    0.05     .06     .05    5200   .0075
699          RX       0      50      70      90     110     130     150     200
700          RY       6       5       3       0       0       3       5       6
             *

701          KK    A11F   BASIN
702          KM  SUB-BASIN A11F
703          BA   0.334
704          LG    0.33    0.31    4.35    0.40       8
705          UC   0.624   0.419
706          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
707          UA     100
             *
             * COMBINE Flows of A11F and RC41                                                        G
             *
1                                    HEC-1 INPUT                                                    PAGE 20

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

```
708          KK   CA11F
709          HC       2
             *
             * COMBINE Flows of CA11F and CA11EB
             *

710          KK   CA11E
711          HC       2
             *
             * ROUTE FLOW TO A11A FROM CA11E
             *

712          KK   RA11E
713          RS       3    FLOW       0
714          RC    0.05     .06      .05    1700   .0070
715          RX       0      50       70      90     110     130     150     200
716          RY       6       5        3       0       0       3       5       6
             *

717          KK    A09U   BASIN
718          KM  SUB-BASIN A09U
719          BA   0.175
720          LG    0.32    0.30    4.20    0.43      22
721          UC   0.347   0.227
722          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
723          UA     100
             *
             * Happy Valley RD. Improvements
             * 0 % FLOW GOES DOWN to South,100% WEST along HAPPY VALLEY
             *

724          KK   DA09U
725          DT   A09UI     0.0     0.0
726          DI     0.0    10.0   100.0  1000.0  5000.0     0.0     0.0     0.0     0.0     0.0
727          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CA09T FROM A09U                                                   G
             *

728          KK  RA09UW
729          RS       9    FLOW       0
730          RC    0.05    0.03     .05    4000   .0075
731          RX       0     200     210     220     240     270     295     595
732          RY     4.5       2       0       2       3       3     3.5     4.5
             *

733          KK    A09T   BASIN
734          KM  SUB-BASIN A09T
735          BA   0.182
736          LG    0.33    0.31    4.30    0.41       2
737          UC   0.551   0.388
738          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
739          UA     100
             *
             * COMBINE  CA09U AND A09T
             *
```



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

740          KK   CA09T
741          HC       2
```



```
             *
             * HAPPY VALLEY ROAD Improvements, 100% Flow TO THE WEST
             *

742          KK   DA09T
743          DT   A09TI     0.0     0.0
744          DI     0.0    10.0   100.0  1000.0 10000.0     0.0     0.0     0.0     0.0     0.0
745          DQ     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
             *
             * ROUTE FLOW TO CX22 FROM CA09T
             *

746          KK  RA09TW
747          RS       2    FLOW       0
748          RC    0.05    0.03    0.05    1500   .0025
749          RX       0     200     210     220     230     270     295     595
750          RY       6       4       0       0       4       4     5.5       7
             *

751          KK    A11A   BASIN
752          KM  SUB-BASIN A11A
753          BA   0.298
754          LG    0.23    0.29    6.00    0.21      34
755          UC   0.568   0.362
756          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
757          UA     100
             *
             * On-site Retention Basin
             *     GP

758          KK  DA11AQ
759          DT   DA11A     7.7
760          DI       0     100    1000    1000
761          DQ       0     100    1000    1000
             *
             * Combine  Flows of RA09TW, CA11E,and A11A
             *

762          KK    CX23
763          HC       3
             *
             * ROUTE FLOW TO CS1 FROM CX23                                                      GP
             *

764          KK    RX23
765          RS       7    FLOW       0
766          RC    0.05     .06      .05    4000   .0074
767          RX       0      50     150     175     275     300     400     500
768          RY      12       8       6       0       0       6       8      12
             *
```



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

769          KK      S1   BASIN
770          KM  SUB-BASIN S1
771          BA   0.124
772          LG    0.31    0.27    4.25    0.47      12
773          UC   0.597   0.527
774          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
775          UA     100
             *
```

```
776          KK      P2   BASIN
777          KM  SUB-BASIN P2
778          BA   0.051
779          LG    0.25    0.25    4.45    0.43      29
780          UC   0.316   0.203
781          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
782          UA     100
             *

783          KK     RT2
784          KM
785          DT     RB2   4.740
786          DI       0     100     500    1000    5000
787          DQ       0     100     500    1000    5000
             *

788          KK     CS1
789          KM
790          HC       3
             *

791          KK     RS1
792          KM  CHANNEL ROUTING
793          RD     924   .0108    .035            TRAP     200       6
             *

794          KK      S2   BASIN
795          KM  SUB-BASIN S2
796          BA   0.012
797          LG    0.34    0.33    4.70    0.32       3
798          UC   0.198   0.111
799          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
800          UA     100
             *

801          KK      S3   BASIN
802          KM  SUB-BASIN S3
803          BA   0.006
804          LG    0.30    0.25    4.65    0.32       5
805          UC   0.154   0.090
806          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
807          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 23
        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

808          KK     CS2
809          KM
810          HC       3
             *

811          KK     RS2
812          KM  CHANNEL ROUTING
813          RD     665   .0075    .020            TRAP      20       4
             *

814          KK      P3   BASIN
815          KM  SUB-BASIN P3
816          BA   0.054
817          LG    0.25    0.25    4.45    0.43      30
818          UC   0.431   0.361
819          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
```



```
820          UA     100
             *

821          KK     RT3
822          KM
823          DT     RB3   5.230
824          DI       0     100     500    1000    5000
825          DQ       0     100     500    1000    5000
             *

826          KK     CP3
827          KM
828          HC       2
             *

829          KK     P4b   BASIN
830          KM  SUB-BASIN P4b
831          BA   0.017
832          LG    0.25    0.25    4.45    0.43      30
833          UC   0.225   0.132
834          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
835          UA     100
             *

836          KK    RT4b
837          KM
838          DT    RB4b   0.320
839          DI       0     100     500    1000    5000
840          DQ       0     100     500    1000    5000
             *

841          KK      S4   BASIN
842          KM  SUB-BASIN S4
843          BA   0.014
844          LG    0.33    0.31    4.80    0.30       2
845          UC   0.361   0.546
846          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
847          UA     100
             *
1                                          HEC-1 INPUT                                          PAGE 24
        LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

848          KK      P1   BASIN
849          KM  SUB-BASIN P1
850          BA   0.029
851          LG    0.34    0.38    6.00    0.18       1
852          UC   0.362   0.389
853          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
854          UA     100
             *

855          KK     DT1
856          KM
857          DT     DB1   0.500
858          DI       0     100     500    1000    5000
859          DQ       0     100     500    1000    5000
             *

860          KK     CP1
861          KM
862          HC       2
             *
```

```
863          KK     HV2   BASIN
864          KM  SUB-BASIN HV2
865          BA   0.031
866          LG    0.25    0.25    4.45    0.43      29
867          UC   1.500   4.221
868          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
869          UA     100
             *

870          KK    RHV2
871          KM  CHANNEL ROUTING
872          RD     910   .0033    .015            TRAP      10       4
             *

873          KK   DTHV2
874          KM
875          DT   DBHV2   0.680
876          DI       0     100     500    1000    5000
877          DQ       0     100     500    1000    5000
             *

878          KK     P4a   BASIN
879          KM  SUB-BASIN P4a
880          BA   0.039
881          LG    0.25    0.25    4.00    0.55      30
882          UC   0.499   0.448
883          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
884          UA     100
             *
```



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

885          KK    DT4a
886          KM
887          DT    DB4a   0.740
888          DI       0     100     500    1000    5000
889          DQ       0     100     500    1000    5000
             *

890          KK   SOUTH
891          KM  Combined at South HVR
892          HC       5
             *

893          KK    N11O   BASIN
894          KM  SUB-BASIN N11O
895          BA   0.054
896          LG    0.35    0.35    4.50    0.36       0
897          UC   0.458   0.338
898          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
899          UA     100
             *
             * A WASH TO THE WEST THAT CARRIES A MAX. FLOW OF 47 CFS.
             *

900          KK   DN11O
901          DT   N11OI
902          DI       0      30      60     100     300     600    1200    2200
903          DQ       0      27      54      90     270     553    1153    2153
             *
             * ROUTE RN11OW IS 2752 FT WITH A SLOPE OF .0025
```



```
             * CROSS SECTION IS A MEDIUM NATURAL WASH
             *

904          KK  RN11OW
905          RS      15    FLOW       0
906          RC    0.05     .06     .05    2752   .0025
907          RX       0      50     250     350     360     420     620     720
908          RY      10       8       6       2       0       6       8      10
             *
             * RECOVER DIVERTED FLOW FROM CA09T
             *

909          KK  DRA09T
910          DR   A09TI
             *
             * ROUTE RA09TS IS 2824 FT WITH A SLOPE OF .0057
             * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
             * ROUTE FLOW TO CA09R FROM CA09T
             *
```



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

911          KK  RA09TS
912          RS      15    FLOW       0
913          RC    0.05     .06     .05    2824   .0057
914          RX       0     400     800    1200    1600    2000    2400    2800
915          RY       3       1      .5       0       0      .5       1       3
             *

916          KK    A09R   BASIN
917          KM  SUB-BASIN A09R
918          BA   0.144
919          LG    0.35    0.34    4.25    0.43       1
920          UC   0.792   0.663
921          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
922          UA     100
             *
             * COMBINE  CN11O,  CA09T, AND A09R
             *

923          KK   CA09R
924          HC       3
             *
             * EXISTING CONDITIONS FLOW DOWN LAKE PLEASANT RD
             *

925          KK   DA09R
926          DT   A09RI
927          DI       0      10      50     100     300     500     800    1000    2000
928          DQ       0     9.9    49.3    99.4   299.5     499     799     999    1999
             *
             * ROUTE RA09RW IS 1609 FT WITH A SLOPE OF .0012
             * *** ROUTE FLOW TO CA09S FROM CA09R  *************************
             *

929          KK  RA09RW
930          RS      15    FLOW       0
931          RC    0.05    0.04     .05    1609  0.0012
932          RX       0     200     300     325     340     360     380     880
933          RY       5       4       3       2       3       3       2     3.5
             *
```

```
934          KK    A09S   BASIN
935          KM  SUB-BASIN A09S
936          BA   0.072
937          LG    0.13    0.25    4.90    0.40      71
938          UC   0.515   0.441
939          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
940          UA     100
             *
             * On-site Retention Basin
             *     GP
```



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

941          KK  DA09SQ
942          DT   DA09S     7.0
943          DI       0     100    1000    1000
944          DQ       0     100    1000    1000
             *
             * *** COMBINE  RA09RW AND A09S ***********************************************
             *

945          KK   CA09S
946          HC       2
             *

947          KK  RA09SW
948          RS       6    FLOW       0
949          RC    0.03    0.03    0.03    1600  0.0085
950          RX       0      50     100     120     140     160     210     260
951          RY       6       4       3       0       0       3       4       6
             *

952          KK   A09QA   BASIN
953          KM  SUB-BASIN A09Q North Portion
954          BA   0.092
955          LG    0.34    0.34    4.20    0.44       2
956          UC   0.534   0.331
957          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
958          UA     100
             *
             * *** COMBINE  Flows of RA09SW and A09QA ***************************************
             *

959          KK  CA09QA
960          HC       2
             *
             * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ***************************
             * FUTURE SPLIT: ALL EXISTING FLOW TO THE SOUTH
             *

961          KK  DA09QA
962          DT  A09QAI
963          DI       0      10      30      50     100     500    1000    2000
964          DQ       0     9.2    29.3    49.4    99.5     499     999    1999
             *
             * *** ROUTE CA09QA TO CA99YA ******************************************
             *

965          KK  RA09QW
966          RS       4    FLOW       0
967          RC    0.03    0.03    0.03    2400  0.0085
968          RX       0      50     100     120     140     160     210     260
```



```
969          RY       6       4       3       0       0       3       4       6
             *
```



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

970          KK   A99YA   BASIN
971          KM  SUB-BASIN A99Y East Portion
972          BA   0.103
973          LG    0.35    0.34    4.90    0.29       1
974          UC   0.413   0.291
975          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
976          UA     100
             *
             * *** COMBINE  RA09QW AND A99YA ***********************************************
             *

977          KK  CA99YA
978          HC       2
             *

979          KK  RA99YA
980          RS       3    FLOW       0
981          RC    0.03    0.03    0.03    2000  0.0085
982          RX       0      50     100     120     140     160     210     260
983          RY       6       4       3       0       0       3       4       6
             *

984          KK   A99YB   BASIN
985          KM  SUB-BASIN A99Y West Portion
986          BA   0.171
987          LG    0.34    0.34    3.78    0.55       4
988          UC   0.556   0.298
989          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
990          UA     100
             *
             * *** COMBINE  RA99YA, SOUTH AND A99YB ********************************************
             *

991          KK  CA99YB
992          HC       3
             *
             *
             * Dummy Combining at AFR and South of Happy Valley Rd.
             *

993          KK    AFR1
994          HC       3
             *
             * RECOVER DIVERTED FLOW FROM A09U
             *

995          KK  BA09UI
996          DR   A09UI
             *
             * *** ROUTE RA09US ***************************************************************
             * ROUTE RA09US IS 3000 FT WITH A SLOPE OF 0.0076
             * CROSS SECTION IS A SMALL ROAD WITH HOMES ON THE WEST SIDE
             * ALONG local STREETS
             * *** ROUTE FLOW TO N11NB FROM Happy Valley RD (CA09U)
             *
```

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

 997          KK  RA09US
 998          RS       6    FLOW       0
 999          RC    0.04    0.03    0.04    3000  0.0076
1000          RX       0       1      54      55      95      96     124     624
1001          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *
              *

1002          KK   N11NB   BASIN
1003          KM  SUB-BASIN N11NBN
1004          BA   0.140
1005          LG    0.31    0.27    4.70    0.31       4
1006          UC   0.567   0.481
1007          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1008          UA     100
              *
              * Combining Flows
              *

1009          KK  CN11NB
1010          HC       2
              *
              * ROUTE RN11NW IS 2521 FT WITH A SLOPE OF 0.0016
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO BOTH SIDES
              * ALONG Mariposa GrANDe
              *

1011          KK  RN11NW
1012          RS      12    FLOW       0
1013          RC    0.04    0.03    0.04    2521  0.0016
1014          RX       0       1      70      71      96      97     182     183
1015          RY    9.25    1.25    0.25       0       0    0.25    1.25    9.25
              *
              * RECOVER DIVERTED FLOW FROM N11OI

1016          KK  BN11OI
1017          DR   N11OI
              *
              * ROUTE RN11OS IS 1184 FT WITH A SLOPE OF 0.0068
              * CROSS SECTION IS SHALLOW CONCENTRATED FLOW
              * ALONG natural pathways
              * ROUTE FLOW TO Mariposa GrANDe (CN11M) FROM CN11O
              *

1018          KK  RN11OS
1019          RS      15    FLOW       0
1020          RC    0.05     .06     .05    1184  0.0068
1021          RX       0     400     800    1200    1600    2000    2400    2800
1022          RY       3       1      .5       0       0      .5       1       3
              *
```



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

1023          KK    N11M   BASIN
1024          KM  SUB-BASIN N11M
1025          BA   0.100
1026          LG    0.35    0.35    4.15    0.45       0
1027          UC   0.477   0.261
1028          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1029          UA     100
              *
              * *** COMBINE  CN11M ******************************************************
              * COMBINE BASIN N11M, RN11OS, and RN11NW
              * Mariposa GrANDe AND 95st AVE
              *

1030          KK   CN11M
1031          HC       3
              *
              * *** DIVERSION DN11M ********************************************************
              * DIVERSION MAIN 95th AVE(SOUTH), SPLIT (WEST)
              *

1032          KK   DN11M
1033          DT   N11MI
1034          DI       0       1      40      80     100     300     600    1200    2200
1035          DQ       0     .25      10      20      25      75     150     184     184
              *
              * ROUTE RN11MS IS 2689 FT WITH A SLOPE OF 0.0071
              * CROSS SECTION IS A SMALL ROAD WITH HOMES TO ONE SIDE
              * ALONG 95st AVE
              * ROUTE FLOW TO PINNACLE PEAK (CN11J) FROM Mariposa GrANDe (CN11M)
              *

1036          KK  RN11MS
1037          RS       7    FLOW       0
1038          RC    0.05    0.03    0.05    2689  0.0071
1039          RX       0       1      50      51      73      74     124     524
1040          RY    9.25    1.25    0.25       0       0    0.25    1.25    3.25
              *

1041          KK    N11J   BASIN
1042          KM  SUB-BASIN N11J
1043          BA   0.244
1044          LG    0.30    0.25    4.10    0.51      13
1045          UC   0.851   0.601
1046          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1047          UA     100
              *
              * *** STORAGE ROUTING LN11J ***********************************************
              * *** SMALL SUBDIVISION STORAGE (ACCOUNTED) ******************************
              *
```



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

1048          KK   LN11J
1049          DT  LN11JD     1.8
1050          DI       0     100    1000   10000
1051          DQ       0     100    1000   10000
              *
              * COMBINE N11J AND RN11KW
              * Pinnacle Peak AND 95st AVE
              *

1052          KK   CN11J
1053          HC       2
              *
              * Existing Condition 100% to South
              *

1054          KK   DN11J
```

```
1055          DT   N11JI
1056          DI       0      10     100    1000    5000
1057          DQ       0      10     100    1000    5000
              *
              * ROUTE RN11JW IS 1080 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *
              * ROUTE FLOW TO CX4 FROM CN11J
              *

1058          KK  RN11JW
1059          RS       1    FLOW       0
1060          RC     .04    0.04     .04    1080   .0019
1061          RX       0     100     140     160     200     300     400     500
1062          RY      10       9       0       0       9      10      11      12
              *
              * RECOVER DIVERTED FLOW FROM CN11M
              *

1063          KK  DRN11M
1064          DR   N11MI
              *
              * ROUTE RN11MW IS 3871 FT WITH A SLOPE OF .0046
              * CROSS SECTION IS A ROAD WITH HOMES TO THE WEST SIDE
              * ROUTE FLOW TO CX4 FROM CN11M
              *

1065          KK  RN11MW
1066          RS      15    FLOW       0
1067          RC    0.05    0.04     .05    3871   .0046
1068          RX       0       1      50      51      76      77     102     602
1069          RY      10       2       1    0.75    0.75       1       2     3.5
              *
              * *** COMBINE  CN11J AND CN11M ***********************************************
              *
```



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

1070          KK     CX4
1071          HC       2
              *
              * ROUTE RX4 IS 2164 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09O FROM CX4  ***************************
              *

1072          KK     RX4
1073          RS       6    FLOW      -1
1074          RC     .04    0.04     .04    2164  0.0023
1075          RX       0     100     140     160     200     300     400     500
1076          RY      10       9       0       0       9      10      11      12
              *

1077          KK    A09O   BASIN
1078          KM  SUB-BASIN A09O
1079          BA   0.194
1080          LG    0.32    0.29    4.40    0.41       6
1081          UC   0.937   0.939
1082          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1083          UA     100
              *
```



```
1084          KK   SA09O STORAGE
1085          KM  Online Detention Basin, 28.5 ac-ft.
1086          RS       1    STOR       0
1087          SV       0     9.0    15.0    21.0    28.5    38.0
1088          SE       0       2       3       4       5       6
1089          SL       0   7.065    0.62     0.5
1090          SS       5     100     2.7     1.5
              *
              * RECOVER DIVERTED FLOW FROM A09RI
              *

1091          KK  BA09RI
1092          DR   A09RI
              *
              * ROUTE RA09RS IS 3928 FT WITH A SLOPE OF .0074
              * CROSS SECTION IS A HIGHWAY
              * ROUTE FLOW TO CA09O FROM CA09R
              *

1093          KK  RA09RS
1094          RS      12    FLOW       0
1095          RC    0.05    0.04    0.05    3928   .0074
1096          RX       0     100     200     225     250     275     375     475
1097          RY       6       5       4       3       3       4       5       6
              *
              * *** COMBINE  CX4, RA09RS, AND A09O ******************************************
              *
```



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

1098          KK   CA09O
1099          HC       3
              *
              * Existing Condition: All Flow to South
              *

1100          KK   DA09O
1101          DT   A09OI
1102          DI       0     100    1000    5000
1103          DQ       0     100    1000    5000
              *
              *
              * ROUTE RA09OW IS 1076 FT WITH A SLOPE OF .0019
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09P FROM CA09O  **************************
              *

1104          KK  RA09OW
1105          RS       1    FLOW       0
1106          RC     .04     .04     .04    1076  0.0019
1107          RX       0     100     140     160     200     300     400     500
1108          RY      10       9       0       0       9      10      11      12
              *

1109          KK    A09P   BASIN
1110          KM  SUB-BASIN A09P
1111          BA   0.187
1112          LG    0.32    0.29    4.65    0.34       6
1113          UC   0.727   0.513
1114          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1115          UA     100
              *
```

```
1116          KK   SA09P STORAGE
1117          KM  Online Detention Basin, 25.2 ac-ft.
1118          RS       1    STOR       0
1119          SV       0     7.0    13.0    19.0    25.2    33.0
1120          SE       0       2       3       4       5       6
1121          SL       0   7.065    0.62     0.5
1122          SS       5     100     2.7     1.5
              *
              * *** COMBINE  CA09O AND A09P ***********************************************
              *

1123          KK   CA09P
1124          HC       2
              *
              * ROUTE RA09P IS 884 FT WITH A SLOPE OF .0136
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              * *** ROUTE FLOW TO CA09P  *************************
              *
1                                          HEC-1 INPUT                                          PAGE 34

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

1125          KK   RA09P
1126          RS       2    FLOW       0
1127          RC     .04     .04     .04     884  0.0136
1128          RX       0     100     140     160     200     300     400     500
1129          RY      10       9       0       0       9      10      11      12
              *
              * Retrieve Diverted Flow of A09QAI
              *

1130          KK  BA09QA
1131          DR  A09QAI
              *
              * *** ROUTE FLOW TO CA09QB FROM CA09QA *************************
              *

1132          KK  RA09QB
1133          RS       8    FLOW       0
1134          RC    0.05     .06     .05    2700  0.0095
1135          RX       0     100     300     360     380     420     620     720
1136          RY      10       8       6       2       0       6       8      10
              *

1137          KK   A09QB   BASIN
1138          KM  SUB-BASIN A09Q South Portion
1139          BA   0.144
1140          LG    0.30    0.25    4.15    0.44       5
1141          UC   0.636   0.449
1142          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1143          UA     100
              *
              * *** COMBINE Flows of A09QA,A09QB  and RA09P  *********************************
              *

1144          KK   CA09Q
1145          HC       3
              *
              * Existing Condition:All Flow to South
              *

1146          KK   DA09Q
```



```
1147          DT   A09QI
1148          DI       0      10     100     500    1000    5000
1149          DQ       0      10     100     500    1000    5000
              *
              * ROUTE RA09QW IS 2468 FT WITH A SLOPE OF 0.0158
              * CROSS SECTION IS A MEDIUM CHANNEL
              * *** ROUTE CA09Q TO CA10A ********************************************
              *
1                                          HEC-1 INPUT                                          PAGE 35

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

1150          KK  RA09QW
1151          RS       1    FLOW       0
1152          RC     .05     .05     .05    2468  0.0158
1153          RX       0     100     140     160     200     300     400     500
1154          RY      10       9       0       0       9      10      11      12
              *

1155          KK    A10A   BASIN
1156          KM  SUB-BASIN A10A
1157          BA   0.189
1158          LG    0.33    0.32    5.30    0.24       2
1159          UC   0.524   0.330
1160          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1161          UA     100
              *

1162          KK   CA10A
1163          HC       2
              *
              * ROUTE RA10A IS 2831 FT WITH A SLOPE OF 0.0148
              * CROSS SECTION IS THE NEW CHANNEL ALONG PINNACLE PEAK ROAD
              *

1164          KK   RA10A
1165          RS       2    FLOW       0
1166          RC    0.05    0.05    0.05    1553     .03
1167          RX       0     100     140     170     210     310     410     510
1168          RY      10       9       0       0       9      10      11      12
              *

1169          KK    A99X   BASIN
1170          KM  SUB-BASIN A99X
1171          BA   0.264
1172          LG    0.21    0.28    4.20    0.53      39
1173          UC   0.419   0.203
1174          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1175          UA     100
              *

1176          KK   CA99X
1177          HC       2
              *
              * Dummy Combination at AFR and Pinnacle Peak Rd.
              *

1178          KK    AFR2
1179          HC       2
              *
              * Retrieve Diverted Flow of A09OI
              *
1                                          HEC-1 INPUT                                          PAGE 36
```

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

1180          KK  BA090I
1181          DR   A090I
              *
              * ROUTE RA090S IS 5602 FT WITH A SLOPE OF .0062
              * CROSS SECTION IS A RURAL ROAD WITH A DITCH RIGHT
              * *** ROUTE FLOW TO CX7 FROM CA090  ***************************
              *

1182          KK  RA090S
1183          RS      8    FLOW       0
1184          RC    .03     .03     .03    5602   .0062
1185          RX      0     200     220   227.5     235     255     300     460
1186          RY      4       2       0       0       2     2.5       3       4
              *

1187          KK    A09K   BASIN
1188          KM  SUB-BASIN A09K
1189          BA   0.410
1190          LG    0.34    0.34    4.40    0.39       2
1191          UC   0.845   0.559
1192          UA      0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1193          UA    100
              *

1194          KK   DA09K
1195          KM  DIVERSION DA09K
1196          KM  DIVERSION SPLITS FLOW WITHIN SUB-BASIN A09K BASED ON TOPOGRAPHICAL SPLIT
1197          KM  A PORTION OF THE FLOW IS DIRECTED WEST TO LAKE PLEASANT PARKWAY
1198          KM  THE REMAINDER IS DIRECTED TO N11FA
1199          DT   A09KI
1200          DI      0     100     200     300     400     500     600     700    2000
1201          DQ      0      73     146     219     292     365     438     511    1460
              *

1202          KK     CX7
1203          KM  COMBINE Flows from North and East
1204          HC      2
              *

1205          KK    RX7S
1206          KM  ROUTE FLOW SOUTH TO CX8 FROM CX7
1207          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1208          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1209          KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE WEST SIDE
1210          RS      5    FLOW       0
1211          RC    .03     .03     .03    2800    .002
1212          RX      0       3       9      15      35      41      47      50
1213          RY      5       4       2       0       0       2       4       5
              *
              * North Portion of N11N
              *
```



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

1214          KK   N11NA   BASIN
1215          KM  UPPER PART OF SUBBASIN N11N
1216          BA   0.022
1217          LG    0.35    0.35    4.00    0.47      29
```



```
1218          UC   0.178   0.111
1219          UA      0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1220          UA    100
              *

1221          KK  RN11NA
1222          RS     13    FLOW       0
1223          RC   0.05    0.04     .05    3500  0.0083
1224          RX      0       1      51      52      82      83     108     608
1225          RY   9.25    1.25    0.25       0       0    0.25    1.25    3.75
              *

1226          KK   N11NC   BASIN
1227          KM  East PART OF SUBBASIN N11N
1228          BA   0.171
1229          LG    0.31    0.29    4.20    0.46       7
1230          UC   0.453   0.276
1231          UA      0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1232          UA    100
              *

1233          KK  CN11NC
1234          HC      2
              *

1235          KK  DN11NC
1236          KM  DIVERT FLOW 10-YEAR RUNOFF (149 cfs) to East
1237          DT   N11NP
1238          DI      0     149    2000
1239          DQ      0     149     149
              *

1240          KK  RN11NC
1241          KM  ROUTE N11NC to South
1242          RS      5    FLOW      -1
1243          RC   0.05    0.04     .05    1600  0.0089
1244          RX      0      10      20      30      70      80      90     100
1245          RY      3       2       1       0       0       1       2       3
              *

1246          KK   N11ND   BASIN
1247          KM  LOWER PART OF SUBBASIN N11N
1248          BA   0.053
1249          LG    0.29    0.25    4.60    0.36      12
1250          UC   0.564   0.502
1251          UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1252          UA    100
              *
```



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

1253          KK    N11K   BASIN
1254          KM  SUB-BASIN N11K
1255          BA   0.167
1256          LG    0.30    0.25    4.20    0.46       9
1257          UC   0.772   0.599
1258          UA      0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1259          UA    100
              *

1260          KK   CN11K
1261          KM  COMBINE N11K, RN11NC AND N11ND AT 91ST AVENUE AND PINNACLE PEAK
```

```
1262        HC       3
            *
            * Divert 10-Year Flow (55 cfs) into SD to East

1263        KK  DN11KS
1264        DT   N11KP
1265        DI       0      55     500    2000
1266        DQ       0      55      55      55
            *

1267        KK   RN11K
1268        RS      15    FLOW       0
1269        RC     .04    0.04     .04    5178   .0062
1270        RX       0     200     230     260     280     310     340     540
1271        RY      10       8       7       0       0       7       8      10
            *
            * Initial flow goes to west and excess flow splits to southeast
            * DIVERSION HAS BEEN MODIFIED FROM ORIGINAL ENTELLUS STUDY
            * PER CITY OF PEORIA COMMENTS (1/18/05)
            *

1272        KK     DX5
1273        DT     X5I
1274        DI       0      10     100     200     300     400     500    1000    2000
1275        DQ       0       0       0      94     154     249     344     844    1844
            *
            * ROUTE RX5W IS 1292 FT WITH A SLOPE OF 0.0008
            * CROSS SECTION IS DIRT ROAD
            * WEST ALONG DEER VALLEY RD
            * ROUTE FLOW FROM 91st AVE. (CN11H) TO WEST OF 91st AVE (CX5)
            *

1276        KK    RX5W
1277        RS      11    FLOW       0
1278        RC    0.05   0.045    0.05    1292   .0008
1279        RX       0     200     225     250     270     295     320     520
1280        RY    4.25    2.25    1.25       0       0    1.25    2.25    4.25
            *
1                                          HEC-1 INPUT                                                    PAGE 39

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

1281        KK    N11H   BASIN
1282        KM  SUB-BASIN N11H
1283        BA   0.419
1284        LG    0.35    0.35    4.50    0.36       0
1285        UC   0.843   0.519
1286        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1287        UA     100
            *
            * COMBINE RX5W AND BASIN N11H
            *

1288        KK   CN11H
1289        HC       2
            *
            * NEW ALTERNATIVE CHANNEL ACROSS STATE LAND
            *

1290        KK   RN11H
1291        KM  ROUTE FLOW WEST TO CN11G FROM CN11H
1292        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1293        KM  3:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
```



```
1294        KM  ADJACENT TO DEAR VALLEY ROAD ON THE NORTH SIDE
1295        RS       7    FLOW       0
1296        RC     .03     .03     .03    3300    .001
1297        RX       0       3      12      18      38      44      53      56
1298        RY       6       5       2       0       0       2       5       6
            *
            * RECOVER DIVERTED FLOW FROM N11J                                                            G
            *

1299        KK  BN11JI
1300        DR   N11JI
            *
            * ROUTE RN11JS IS 5670 FT WITH A SLOPE OF 0.0062
            * CROSS SECTION IS A SMALL NATURAL WASH
            * ALONG NATURAL WASH
            * ROUTE FLOW TO DEER VALLEY RD. (CN11G) FROM PINNACLE PEAK (CN11J)
            *

1301        KK  RN11JS
1302        RS      12    FLOW       0
1303        RC    0.05    0.06    0.05    5670  0.0062
1304        RX       0     350     450     480     482     510     610     910
1305        RY       7       6       5       1       0       5       6       7
            *

1306        KK    N11G   BASIN
1307        KM  SUB-BASIN N11G
1308        BA   0.524
1309        LG    0.35    0.35    4.35    0.40       0
1310        UC   0.844   0.464
1311        UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1312        UA     100
            *
            * COMBINE  RN11JS, RN11H AND N11G AT 98TH AVE
            *
1                                          HEC-1 INPUT                                                    PAGE 40

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

1313        KK   CN11G
1314        HC       3
            *

1315        KK   RN11G
1316        KM  ROUTE FLOW SOUTH TO CN11FB FROM CN11G
1317        KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1318        KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1319        KM  ADJACENT TO 98TH AVE ON THE WEST SIDE
1320        RS       4    FLOW       0
1321        RC     .03     .03     .03    2500    .002
1322        RX       0      12      24      36      62      68      72      80
1323        RY       6       4       2       0       0       2       4       6
            *

1324        KK   N11DA   BASIN
1325        KM  SUB-BASIN N11DA CREATED BY CVL 7/04
1326        BA   0.256
1327        LG    0.25    0.25    4.60    0.39      30
1328        UC   0.781   0.511
1329        UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1330        UA     100
            *
            * DOVE VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
```

```
                 * STORAGE MODIFIED PER CITY OF PEORIA TO DISCHARGE UP TO 200CFS WEST
                 * TOTAL DETENTION/RETENTION VOLUME = 18 AC-FT, 10 AC-FT MODELED AS RETENTION
                 * 8 AC-FT MODELED AS ON-LINE DETENTION BASIN ON NEC OF RGL & 95TH
                 *

1331             KK  LN11DA
1332             DT  LDAOUT     8.0
1333             DI       0     100    1000   10000
1334             DQ       0     100    1000   10000
                 *

1335             KK  SN11DA
1336             KM  2-8'x3' BOX CULVERTS TO TAKE FLOW TO WEST
1337             KM  THE WEST + EAST DETENTION BASIN WERE COMBINED WITH 1-18"RCP TO SOUTH
1338             RS       1    STOR       0
1339             SV     0.0     .06    0.16    0.35    1.91    5.62   10.58   16.46
1340             SE    1257    1258    1259    1260    1261    1262    1263    1264
1341             SQ       0       5       9      50      84     113     140     205
                 *

1342             KK  N11DAW
1343             KM  SPLIT THE FLOW BETWEEN BOX AND PIPE - Pipe Flow to South
1344             DT  D11DAS
1345             DI       0       5       9      50      84     113     140     205
1346             DQ       0       5       9      15      18      20      22      23
                 *
1                                              HEC-1 INPUT                                          PAGE 41

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

1347             KK  RN11DA
1348             KM  ROUTE FLOW WEST TO CN11FB FROM N11DA
1349             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1350             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1351             KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1352             RS       5    FLOW       0
1353             RC     .03     .03     .03    2000    .001
1354             RX       0       6      18      30      35      41      47      50
1355             RY       5       4       2       0       0       2       4       5
                 *

1356             KK   N11FB   BASIN
1357             KM  SUB-BASIN N11FB
1358             BA   0.121
1359             LG    0.24    0.26    4.40    0.45      30
1360             UC   0.740   0.694
1361             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1362             UA     100
                 *

1363             KK  LN11FB
1364             KM  STORAGE ROUTING LN11FB
1365             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1366             DT  LN1FBD    10.6
1367             DI       0     100    1000   10000
1368             DQ       0     100    1000   10000
                 *

1369             KK  CN11FB
1370             KM  COMBINE LN11FB and RN11DA
1371             HC       2
                 *
```



```
1372             KK  C98RGL
1373             KM  COMBINE CN11FB AND RN11G AT WEST 98TH AVE AND RGL
1374             HC       2
                 *

1375             KK  RN11FB
1376             KM  ROUTE FLOW WEST TO CN11FA FROM CN11FB
1377             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1378             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1379             KM  ADJACENT TO LAKE PLEASANT PARKWAY ON THE NORTH SIDE
1380             RS       2    FLOW       0
1381             RC     .03     .03     .03    1100    .001
1382             RX       0      12      24      36      62      68      72      80
1383             RY       8       4       2       0       0       2       4       8
                 *
1                                              HEC-1 INPUT                                          PAGE 42

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

1384             KK  DRA09K
1385             KM  DIVERSION RECOVER DA09K
1386             KM  RECOVER DIVERTED FLOW FROM A09K
1387             DR   A09KI
                 *

1388             KK  RA09KS
1389             KM  ROUTE FLOW SOUTH TO CN11FA
1390             KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1391             KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1392             KM  ADJACENT TO THE COMMERCIAL PROPERTY ON THE EAST SIDE
1393             RS       5    FLOW       0
1394             RC     .03     .03     .03    2700    .002
1395             RX       0      12      24      26      52      58      64      70
1396             RY       6       4       2       0       0       2       4       6
                 *

1397             KK   N11FA   BASIN
1398             BA   0.180
1399             LG    0.22    0.26    4.40    0.46      34
1400             UC   0.730   0.580
1401             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1402             UA     100
                 *

1403             KK  LN11FA
1404             KM  STORAGE ROUTING LN11FA
1405             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1406             DT  LN1FAD     7.7
1407             DI       0     100    1000   10000
1408             DQ       0     100    1000   10000
                 *

1409             KK   A09GA   BASIN
1410             BA   0.074
1411             LG    0.10    0.25    4.35    0.56      80
1412             UC   0.287   0.164
1413             UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1414             UA     100
                 *

1415             KK  LA09GA
1416             KM  STORAGE ROUTING LA09GA
1417             KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
```

```
1418          DT  L09GAD     5.9
1419          DI       0     100    1000   10000
1420          DQ       0     100    1000   10000
              *
1                                   HEC-1 INPUT                                                    PAGE 43

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

1421          KK  CN11FA
1422          KM  COMBINE RA09KS,LN11FA,LA09GA AND RN11FB
1423          HC       4
              *
1424          KK  RN11FA
1425          KM  ROUTE FLOW WEST TO CA09G FROM CN11FA
1426          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1427          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1428          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1429          RS       2    FLOW       0
1430          RC     .03     .03     .03     800    .001
1431          RX       0       6      12      18      52      58      64      70
1432          RY       8       4       2       0       0       2       4       8
              *
1433          KK   A09GB   BASIN
1434          KM  SUB-BASIN A09GB
1435          BA   0.051
1436          LG    0.23    0.25    4.30    0.49      35
1437          UC   1.183   1.508
1438          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1439          UA     100
              *
1440          KK  LA09GB
1441          KM  STORAGE ROUTING LA09GB
1442          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1443          DT  L09GBD     2.8
1444          DI       0     100    1000   10000
1445          DQ       0     100    1000   10000
              *
1446          KK   CA09G
1447          KM  COMBINE CA09GA and A09GB
1448          HC       2
              *
              * DIVERSION TO SOUTH ALONG 101ST AVE, MAXIMUM 150 CFS PER CITY

1449          KK   DA09G
1450          DT   A09GI
1451          DI       0      50     100     300     750    1200    2000
1452          DQ       0      10      20      60     150     150     150
              *
1453          KK  RA09GW
1454          KM  ROUTE FLOW WEST TO CX8 FROM CA09G
1455          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1456          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1457          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1458          RS       1    FLOW       0
1459          RC     .03     .03     .03     900    .001
1460          RX       0       6      12      18      52      58      64      70
1461          RY       8       4       2       0       0       2       4       8
              *
```



```
              * *** COMBINE  RX7S AND RA09GW ********************************************
              *
1                                   HEC-1 INPUT                                                    PAGE 44

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

1462          KK     CX8
1463          HC       2
              *
              * ROUTE RX8W IS 2300 FT WITH A SLOPE OF .001
              * CROSS SECTION IS THE NEW CHANNEL ALONG ROSE GARDEN LANE
              *
1464          KK    RX8W
1465          KM  ROUTE FLOW WEST TO CA09H1 FROM CX8
1466          KM  CROSS SECTION IS A PROPOSED TRAPEZOIDAL CHANNEL DESIGNED WITH
1467          KM  6:1 SIDE SLOPES ON THE LEFT BANK AND 3:1 SIDE SLOPES ON THE RIGHT BANK
1468          KM  ADJACENT TO ROSE GARDEN LANE ON THE NORTH SIDE
1469          RS       4    FLOW       0
1470          RC     .03     .03     .03    2300    .001
1471          RX       0      12      24      36      62      68      74      80
1472          RY       8       4       2       0       0       2       4       8
              *
1473          KK    A09H   BASIN
1474          KM  SUB-BASIN A09H
1475          BA   0.237
1476          LG    0.24    0.25    4.55    0.41      31
1477          UC   0.937   0.801
1478          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1479          UA     100
              *
1480          KK   LA09H
1481          KM  STORAGE ROUTING LA09H
1482          KM  PROPOSED RETENTION BASED ON THE 100-YEAR, 2-HOUR STORM VOLUME
1483          DT  LA09HD    12.6
1484          DI       0     100    1000   10000
1485          DQ       0     100    1000   10000
              *
1486          KK  CA09H1
1487          KM  Combine flows from CX8 and A09H
1488          HC       2
              *
1489          KK    A09J   BASIN
1490          KM  SUB-BASIN A09J
1491          BA   0.168
1492          LG    0.25    0.25    4.35    0.46      30
1493          UC   0.749   0.639
1494          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1495          UA     100
              *
              * *** STORAGE ROUTING LA09J ********************************************
              * *** FUTURE DEVELOPMENT STORAGE (ACCOUNTED) ****************************
              *
1                                   HEC-1 INPUT                                                    PAGE 45

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

1496          KK   LA09J
```

```
1497    DT  LA09JD     7.7
1498    DI       0     100    1000   10000
1499    DQ       0     100    1000   10000
        *
        * *** DIVERSION DA09J ***********************************************************
        * *** DIVERTED  MAIN (SOUTH), DIVERTED (WEST)  ****************************
        * 100% Flows to South based on the report

1500    KK   DA09J
1501    DT   A09JI
1502    DI       0      10      30      50     100     500    1000    2000
1503    DQ       0       0       0       0       0       0       0       0
        *
        * *** ROUTE FLOW TO CA09H   *************************
        *

1504    KK  RA09JS
1505    RS      12    FLOW       0
1506    RC     .04     .04     .04    2800  .00350
1507    RX       0     100     200     225     245     270     370     470
1508    RY       8       7       6       0       0       6       7       8
        *

1509    KK   CA09H
1510    KM  COMBINE CA09H1 and RA09JS
1511    HC       2
        *
        * ROUTE FLOW TO CX10 FROM CA09H
        *

1512    KK   RA09H
1513    RS       1    FLOW       0
1514    RC     .03     .03     .03     850    .005
1515    RX     100     118     126     150     200     224     232     250
1516    RY      10       8       6       0       0       6       8      10
        *
        * *** RECOVER DIVERTED FLOW FROM A09QI*************************************
        *

1517    KK  BA09QI
1518    DR   A09QI
        *
        * *** ROUTE RA09QS ***********************************************************
        *
        * ROUTE RA09QS IS 1655 FT WITH A SLOPE OF .0073
        * CROSS SECTION IS A MEDIUM NATURAL WASH
        * *** ROUTE FLOW TO CA09M FROM CA09Q  *************************
        *
```



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

1519    KK  RA09QS
1520    RS       6    FLOW       0
1521    RC    0.05     .06     .05    1655  0.0073
1522    RX       0      50     250     350     360     420     620     720
1523    RY      10       8       6       2       0       6       8      10
        *

1524    KK    A09M   BASIN
1525    KM  SUB-BASIN A09M
1526    BA   0.249
1527    LG    0.28    0.28    4.45    0.42      22
```



```
1528    UC   0.721   0.546
1529    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1530    UA     100
        *
        * *** STORAGE ROUTING LA09M ***********************************************
        * *** IRONWOOD RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) ****************
        *

1531    KK   LA09M
1532    DT  LA09MD     6.9
1533    DI       0     100    1000   10000
1534    DQ       0     100    1000   10000
        *
        * *** COMBINE  CA09Q AND A09M ***************************************************
        *

1535    KK   CA09M
1536    HC       2
        *
        * ROUTE RA09M IS 1102 FT WITH A SLOPE OF .0064
        * CROSS SECTION IS A CHANNEL (MEASURED)
        * *** ROUTE FLOW TO CA09N FROM CA09M  *************************
        *

1537    KK   RA09M
1538    RS       2    FLOW       0
1539    RC    0.05    0.04     .05    1102  0.0064
1540    RX       0       1      21      41      51      71     101     102
1541    RY      10       4       0       4       5       6       6      10
        *

1542    KK    A09N   BASIN
1543    KM  SUB-BASIN A09N
1544    BA   0.110
1545    LG    0.27    0.27    5.80    0.22      25
1546    UC   0.647   0.512
1547    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1548    UA     100
        *
        * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
        *
```



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

1549    KK   CA09N
1550    HC       2
        *
        * *** STORAGE ROUTING LA09N ***********************************************
        * *** ALTA VISTA RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) **************
        *

1551    KK   LA09N
1552    RS       1    STOR       0
1553    SV     0.0    2.30    4.67    7.11    9.63   12.23   14.90   17.65   20.48
1554    SE  1250.0  1250.5  1251.0  1251.5  1252.0  1252.5  1253.0  1253.5  1254.0
1555    SQ       0     9.3    31.4    66.0   114.1   160.1   226.2   208.5   475.0
        *
        * CROSS SECTION IS A CHANNEL (MEASURED)
        * *** ROUTE FLOW TO CA09L FROM CA09N  *************************
        *

1556    KK   RA09N
```

```
1557    RS      15    FLOW       0
1558    RC   0.025    0.02   0.025    2382  0.0040
1559    RX       0       1       7      11      17      21      29     100
1560    RY       5       4       2       0       0       2     3.0       5
        *
        * *** RECOVER DIVERTED FLOW FROM CA09J ****************************************
        *

1561    KK  DRA09J
1562    DR   A09JI
        *
        * ROUTE RA09JW IS 1749 FT WITH A SLOPE OF .0063
        * CROSS SECTION IS A CHANNEL ON THE WEST SIDE OF A ROAD
        * *** ROUTE FLOW TO CA09L FROM CA09J  *************************
        *

1563    KK  RA09JW
1564    RS       1    FLOW       0
1565    RC    0.04    0.03    0.04    1749  0.0063
1566    RX       0       1      21      31      41      51      81     281
1567    RY      14       6       6       0       0       6       6       8
        *

1568    KK    A09L   BASIN
1569    KM  SUB-BASIN A09L
1570    BA   0.136
1571    LG    0.23    0.26    4.90    0.32      26
1572    UC   0.760   0.625
1573    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1574    UA     100
        *
        * *** COMBINE BASIN A09L, RA09N, AND RA09JW   **********************************
        *
```



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

1575    KK   CA09L
1576    HC       3
        *
        * LAO9L is an Onlin Detention Basin, NOT Retention Basin
        *

1577    KK   LAO9L
1578    RS       1    STOR       0
1579    SV     0.0    0.57    1.17    1.82    2.50    3.22    3.98    4.78    5.63    6.52
1580    SE     0.0     0.5     1.0     1.5     2.0     2.5     3.0     3.5     4.0     5.5
1581    SQ       0    10.0    30.0    52.0    80.0   110.0   140.0   155.0   180.0     600
        *
        * ROUTE RA09LS IS 2615 FT WITH A SLOPE OF .0019
        * CROSS SECTION IS A NEW CHANNEL ALONG THE EAST SIDE OF THE ROAD
        * *** ROUTE FLOW TO CA99W FROM CA09L  *************************
        *

1582    KK  RA09LS
1583    RS       3    FLOW       0
1584    RC   0.025     .02   0.025    2615  0.0040
1585    RX       0       1       6      12      19      25      29     100
1586    RY       6       5       4       0       0       4       5       6
        *

1587    KK   A09IH   BASIN
1588    KM   Subbasin for Rose Garden and Desert Star Areas
```



```
1589    KM   SUB-BASIN A09IH
1590    BA   0.091
1591    LG    0.25    0.26    4.60    0.39      27
1592    UC   0.599   0.568
1593    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1594    UA     100
        *
        * *** COMBINE BASIN A09N AND ROUTE RA09M  ********************************
        *

1595    KK  CA09IH
1596    HC       2
        *
        * Onlin Detention Basin (Box Culvert Outlet)
        *

1597    KK  LAO9IH
1598    RS       1    STOR       0
1599    SV     0.0    1.12    2.29    3.52    4.79    6.12    7.51    8.95   10.45   12.01
1600    SE  1237.0  1237.5  1238.0  1238.5  1239.0  1239.5  1240.0  1240.5  1241.0  1242.5
1601    SQ       0    10.0    30.0    52.0    80.0   112.0   145.0   183.0   220.0   600.0
        *
```



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

1602    KK    A09I   BASIN
1603    KM  SUB-BASIN A09I
1604    BA   0.126
1605    LG    0.25    0.20    6.60    0.17      29
1606    UC   0.772   0.703
1607    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1608    UA     100
        *
        * *** ROSE GARDEN RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED)  ************
        *

1609    KK   LAO9I
1610    DT  LAO9ID     5.4
1611    DI       0     100    1000   10000
1612    DQ       0     100    1000   10000
        *
        * *** COMBINE  RA09IW AND RA09LS ***********************************************
        *

1613    KK    CX10
1614    HC       3
        *
        * ROUTE FLOW TO CA09F FROM CA09G
        *

1615    KK    RX10
1616    RS       5    FLOW       0
1617    RC    0.03    0.03    0.03    4470    .005
1618    RX     100     118     126     150     200     224     232     250
1619    RY      10       8       6       0       0       6       8      10
        *

1620    KK    A99V   BASIN
1621    KM  SUB-BASIN A99V
1622    BA   0.207
1623    LG    0.35    0.40    6.00    0.18       1
1624    UC   0.601   0.423
```

```
1625    UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1626    UA     100
        *
        * *** COMBINE BASIN A99V AND RX11W  ************************************
        *

1627    KK   CA99V
1628    HC       2
        *

1629    KK     A10   BASIN
1630    KM  SUB-BASIN A10
1631    BA   0.214
1632    LG   0.34    0.34    4.65    0.33       2
1633    UC   0.467   0.220
1634    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1635    UA     100
        *
        *
```



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

1636    KK    A99W   BASIN
1637    KM  SUB-BASIN A99W
1638    BA   0.215
1639    LG   0.27    0.29    6.40    0.17      20
1640    UC   0.851   0.514
1641    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1642    UA     100
        *
        * *** STORAGE ROUTING LA99W ***********************************************
        * *** DEER VALLEY RANCH RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
        *

1643    KK   LA99W
1644    DT  LA99WD     6.7
1645    DI       0     100    1000   10000
1646    DQ       0     100    1000   10000
        *
        * Dummy Combination at AFR and Rose Garden Lane.
        *

1647    KK    AFR3
1648    HC       4
        *
        * *** RECOVER DIVERTED FLOW FROM CA09G ************************************
        *

1649    KK  DRA09G
1650    DR   A09GI
        *
        * ROUTE RA09GS IS 3990 FT WITH A SLOPE OF .0015
        * CROSS SECTION IS A MEDIUM ROADSIDE CHANNEL
        * ROUTE FLOW TO CA09F FROM CA09G
        *

1651    KK  RA09GS
1652    RS      13    FLOW       0
1653    RC    0.04    0.04    0.04    3990   .0015
1654    RX       0     200     220     240     260     280     320     520
1655    RY       6       4       0       0       3       4       4       6
        *
```



```
1656    KK    A09F   BASIN
1657    KM  SUB-BASIN A09F
1658    BA   0.365
1659    LG   0.21    0.27    5.30    0.28      35
1660    UC   0.817   0.483
1661    UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1662    UA     100
        *
        * *** STORAGE ROUTING LA09F ***********************************************
        * *** PARKRIDGE ESTATES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ***************
        *
```



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

1663    KK   LA09F
1664    DT  LA09FD    13.6
1665    DI       0     100    1000   10000
1666    DQ       0     100    1000   10000
        *
        * *** COMBINE  CA09G, CA09H, AND A09F *****************************************
        *

1667    KK   CA09F
1668    HC       2
        *
        * *** DIVERTED  MAIN (WEST), DIVERTED (SOUTH)  ***************************
        * BEARDSLEY ROAD CHANNEL TO THE WEST. EXCESS FLOW TO THE SOUTH.
        *

1669    KK   DA09F
1670    DT   A09FI
1671    DI       0      10      30      50     100     500     700    1000
1672    DQ       0      .2      .3      .4      .5      80     250     500
        *
        * ******************************************************************************
        * ********************   BEARDSLEY RD DRAINAGE    ******************************
        * ******************************************************************************
        *
        * ROUTE RA09FW IS 3031 FT WITH A SLOPE OF .002
        * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
        *
        * *** ROUTE FLOW TO CA09E FROM CA09F  **************************
        *

1673    KK  RA09FW
1674    RS       9    FLOW       0
1675    RC     .03    .025     .03    3031   0.002
1676    RX       0       1      16      36      51     123     148     648
1677    RY      16       8       0       0       8       8       9      11
        *

1678    KK    A09E   BASIN
1679    KM  SUB-BASIN A09E
1680    BA   0.147
1681    LG   0.22    0.24    4.70    0.35      34
1682    UC   0.763   0.697
1683    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1684    UA     100
        *
        * *** STORAGE ROUTING LA09E ***********************************************
        * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) ******************
```

```
                    *
1                                   HEC-1 INPUT                                                    PAGE 52

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

1685          KK   LA09E
1686          DT  LA09ED     8.2
1687          DI       0     100    1000   10000
1688          DQ       0     100    1000   10000
                    *
                    * *** COMBINE LA09E AND A99E ****************************************
                    *

1689          KK   CA09E
1690          HC       2
                    *
                    * ROUTE RA09E IS 2700 FT WITH A SLOPE OF .0041
                    * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
                    *
                    * ROUTE FLOW TO CA09C FROM CA09E
                    *

1691          KK   RA09E
1692          RS       3    FLOW       0
1693          RC    0.04    0.03    0.04    2700   .0041
1694          RX       0       1      16      36      51     123     148     648
1695          RY      16       8       0       0       8       8       9      11
                    *

1696          KK    A09D   BASIN
1697          KM  SUB-BASIN A09D
1698          BA   0.254
1699          LG    0.23    0.20    6.60    0.16      31
1700          UC   0.480   0.185
1701          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1702          UA     100
                    *
                    * *** STORAGE ROUTING LA09D ***********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
                    *

1703          KK   LA09D
1704          DT  LA09DD    15.3
1705          DI       0     100    1000   10000
1706          DQ       0     100    1000   10000
                    *
                    * *** COMBINE LA09D, AND RA09EW ************************
                    *

1707          KK  CA09C*
1708          HC       2
                    *
                    * ROUTE RA09C* IS 841 FT WITH A SLOPE OF .0083
                    * CROSS SECTION IS BEARDSLEY ROAD CHANNEL (MEASURED)
                    * *** ROUTE FLOW TO CA09C FROM CA09C*   **************************
                    *
1                                   HEC-1 INPUT                                                    PAGE 53

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

1709          KK  RA09C*
1710          RS       1    FLOW       0
```



```
1711          RC    0.04    0.03    0.04     841   .0083
1712          RX       0      51      61      71      81     111     151     651
1713          RY       9       8       0       0       8       9       9      10
                    *

1714          KK    A09C   BASIN
1715          KM  SUB-BASIN A09C
1716          BA   0.073
1717          LG    0.35    0.32    4.50    0.38       4
1718          UC   0.581   0.533
1719          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1720          UA     100
                    *
                    * *** COMBINE BASIN A09C AND RA09C*   **********************************
                    *

1721          KK   CA09C
1722          HC       2
                    *
                    * ROUTE RA09C IS 1978 FT WITH A SLOPE OF .0056
                    * CROSS SECTION IS BEARDSLEY CHANNEL (MEASURED)
                    *

1723          KK   RA09C
1724          RS       3    FLOW      -1
1725          RC    0.04    0.04    0.04    1978  0.0056
1726          RX       0     100     120     130     150     180     205     705
1727          RY      14       8       0       0       8       8       9      10
                    *

1728          KK    A09B   BASIN
1729          KM  SUB-BASIN A09B
1730          BA   0.041
1731          LG    0.12    0.25    4.10    0.68      71
1732          UC   0.221   0.141
1733          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1734          UA     100
                    *
                    * ROUTE RA09B IS 2497 FT WITH A SLOPE OF .0012
                    * CROSS SECTION IS A SMALL NATURAL CHANNEL
                    * *** ROUTE FLOW TO CA09A FROM CA09B  **************************
                    *

1735          KK   RA09B
1736          RS      14    FLOW       0
1737          RC    0.05     .06     .05    2497   .0012
1738          RX       0     350     450     480     482     510     610     910
1739          RY       7       6       5       1       0       5       6       7
                    *
1                                   HEC-1 INPUT                                                    PAGE 54

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

1740          KK    A09A   BASIN
1741          KM  SUB-BASIN A09A
1742          BA   0.084
1743          LG    0.29    0.15    3.74    0.80      38
1744          UC   0.824   0.737
1745          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1746          UA     100
                    *
                    * *** Combine  CA09C, A09B, AND A09A ****************************************
                    *
```

```
1747          KK   CA09A
1748          HC       3
              *
              * THIS FLOW IS DIVERTED. THERE IS TWO 36" CMP THAT CARRIES
              * FLOW TO THE WEST, AND THE REST FLOWS SOUTH.
              *

1749          KK  DA09AO
1750          DT   A09AI
1751          DI       0      70     140     400     600     800    1000    3000    5000
1752          DQ       0     0.2     0.3     260     460     660     860    2860    4860
              *
              * ROUTE RA09AW IS 5898 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A LARGE NATURAL WASH
              * *** ROUTE THE DIVERTED FLOW TO THE WEST AND SOUTH TO CA09 ********************
              *

1753          KK  RA09AW
1754          RS      15    FLOW       0
1755          RC    0.05     .06     .05    5898  0.0017
1756          RX       0      50     250     310     360     420     620     720
1757          RY      10       8       6       0       0       6       8      10
              *

1758          KK    A99T   BASIN
1759          KM  SUB-BASIN A99T
1760          BA   0.030
1761          LG    0.20    0.30    2.79    1.39      42
1762          UC   0.205   0.056
1763          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1764          UA     100
              *
              * *** STORAGE ROUTING LA99T ***********************************************
              * *** GRAVEL PIT STORAGE (ACCOUNTED) ***************************************
              *

1765          KK   LA99T
1766          DT  LA99TD    0.64
1767          DI       0     100    1000   10000
1768          DQ       0     100    1000   10000
              *
              * ROUTE RA99T IS 886 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS A MEDIUM NATURAL WASH
              * *** ROUTE FLOW TO CA09 FROM CA99T   **************************
              *
1                                    HEC-1 INPUT                                          PAGE 55

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

1769          KK   RA99T
1770          RS       5    FLOW       0
1771          RC    0.05     .06     .05     886  0.0023
1772          RX       0      50     250     350     360     420     620     720
1773          RY      10       8       6       2       0       6       8      10
              *

1774          KK     A09   BASIN
1775          KM  SUB-BASIN A09
1776          BA   0.176
1777          LG    0.24    0.31    3.58    0.68      22
1778          UC   0.577   0.239
1779          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
```



```
1780          UA     100
              *
              * COMBINE RA99T, CA09, AND RA09AW
              *

1781          KK    CA09
1782          HC       3
              *

1783          KK    A99U   BASIN
1784          KM  SUB-BASIN A99U
1785          BA   0.070
1786          LG    0.25    0.30    3.71    0.66      29
1787          UC   0.472   0.467
1788          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1789          UA     100
              *
              * COMBINE CA09, A99U, AND AFR3 at AFR & South of Beardsley Rd.
              *

1790          KK    AFR4
1791          HC       3
              *

1792          KK    A99S   BASIN
1793          KM  SUB-BASIN A99S
1794          BA   0.077
1795          LG    0.35    0.35    3.64    0.59       0
1796          UC   0.862   0.851
1797          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1798          UA     100
              *

1799          KK    A08A   BASIN
1800          KM  SUB-BASIN A08A
1801          BA   0.138
1802          LG    0.20    0.30    3.31    0.77      18
1803          UC   1.054   1.135
1804          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1805          UA     100
              *
              * ROUTE RA08A IS 1747 FT WITH A SLOPE OF .0057
              * CROSS SECTION IS A SMALL NATURAL WASH
              * *** ROUTE FLOW TO CA08 FROM CA08A  ***************************
              *
1                                    HEC-1 INPUT                                          PAGE 56

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

1806          KK   RA08A
1807          RS       5    FLOW       0
1808          RC    0.05     0.05    0.05    1747  0.0057
1809          RX       0      350     450     480     482     510     610     910
1810          RY       7        6       5       1       0       5       6       7
              *

1811          KK    A99R   BASIN
1812          KM  SUB-BASIN A99R
1813          BA   0.037
1814          LG    0.31    0.31    3.55    0.66      12
1815          UC   0.408   0.237
1816          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1817          UA     100
```

```
                    *
                    * ROUTE RA99R IS 2159 FT WITH A SLOPE OF .0032
                    * CROSS SECTION IS A SMALL NATURAL WASH
                    * *** ROUTE FLOW TO CA08 FROM CA99R  **************************
                    *

1818                KK   RA99R
1819                RS       9    FLOW       0
1820                RC    0.05    0.05    0.05    2159   .0032
1821                RX       0     350     450     480     482     510     610     910
1822                RY       7       6       5       1       0       5       6       7
                    *

1823                KK     A08   BASIN
1824                KM  SUB-BASIN A08
1825                BA   0.077
1826                LG    0.30    0.31    3.19    0.88      14
1827                UC   0.308   0.074
1828                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1829                UA     100
                    *
                    * *** COMBINE A99S, A08, RA99R AND RA08A   ******************
                    *

1830                KK    CA08
1831                HC       4
                    *
                    * *** COMBINE HYDROGRAPHS OF CA08 AND AFR4 at AFR and South of Union Hills Dr.
                    *

1832                KK    AFR5
1833                HC       2
                    *
                    *
                    * KK  A07G   BASIN
                    * KMSUB-BASIN A07G
                    * BA 0.258
                    * LG  0.24    0.16    7.60    0.11      32
                    * UC 0.641   0.425
                    * UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97
                    * UA   100
                    *
1                                          HEC-1 INPUT                                          PAGE 57

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

1834                KK  A07G.1   BASIN
1835                KM   SUB-BASIN A07G.1
1836                BA   0.233
1837                LG    0.24    0.15    8.00    0.10      33
1838                UC   0.501   0.343
1839                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1840                UA     100
                    *
                    * *** STORAGE ROUTING LA07G ***********************************************
                    * *** VENTANA LAKES RESIDENTIAL DEVELOPMENT (ACCOUNTED) *******************
                    *

1841                KK   LA07G
1842                DT  LA07GD    12.9
1843                DI       0     100    1000   10000
1844                DQ       0     100    1000   10000
                    *
```



```
                    * ROUTE RA07G IS 2439 FT WITH A SLOPE OF .0012
                    * CROSS SECTION IS 111TH AVE (MEASURED)
                    * *** ROUTE FLOW FROM CA07G TO CA07E ***********************************
                    *

1845                KK   RA07G
1846                RS       5    FLOW       0
1847                RC    0.04     .02    0.04    2439  0.0012
1848                RX       0       1      26      41      71      86     126     576
1849                RY      12       7       5       1       1       5       6       7
                    *
                    * KK  A07F   BASIN
                    * KMSUB-BASIN A07F
                    * BA 0.233
                    * LG  0.21    0.27    4.90    0.32      26
                    * UC 0.949   0.902
                    * UA     0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95
                    * UA   100
                    *
                    * KK  A07F   BASIN
                    * KM SUB-BASIN A07F
                    * BA 0.207
                    * LG  0.21    0.28    4.80    0.32      22
                    * UC 0.768   0.763
                    * UA     0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95
                    * UA   100
                    *

1850                KK  A07F.1   BASIN
1851                KM   SUB-BASIN A07F.1
1852                BA   0.133
1853                LG    0.25    0.25    4.80    0.35      30
1854                UC   0.829   1.069
1855                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1856                UA     100
                    *
1                                          HEC-1 INPUT                                          PAGE 58

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

1857                KK  A07F.2   BASIN
1858                KM   SUB-BASIN A07F.2
1859                BA   0.074
1860                LG    0.14    0.32    4.70    0.29       8
1861                UC   0.602   0.853
1862                UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
1863                UA     100
                    *
                    * *** ROUTE RA07F IS 2619 FT WITH A SLOPE OF .0042
                    * *** CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** *** ROUTE FLOW FROM CA07F TO CA07E ***********************************
                    *
                    * KK RA07F
                    * RS     3    FLOW       0
                    * RC  0.03    0.02    0.03    2619  0.0042
                    * RX     0       1      13      23      53      83     108     109
                    * RY    14       6       0       0       6       6       7      15
                    *
                    * KK  A07E   BASIN
                    * KMSUB-BASIN A07E
                    * BA 0.227
                    * LG  0.23    0.15    7.60    0.11      49
                    * UC 0.567   0.345
```

```
                    * UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97
                    * UA   100
                    *

1864                KK  A07E.8   BASIN
1865                KM   SUB-BASIN A07E.8
1866                BA   0.006
1867                LG    0.14    0.25    4.80    0.40      66
1868                UC   0.175   0.193
1869                UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1870                UA   100
                    *
                    * *** COMBINE BASINs A07E.8 AND A07F  ***************************
                    *

1871                KK   CA07F
1872                HC       3
                    *

1873                KK   RA07F
1874                RS       1    FLOW       0
1875                RC    0.03    0.02    0.03     800  0.0042
1876                RX       0       1      13      23      53      83     108     109
1877                RY      14       6       0       0       6       6       7      15
                    *
                    * ROUTE RA07F IS 800 FT WITH A SLOPE OF .0042
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07F TO CA07E.7 ***********************************
                    *
1                                                HEC-1 INPUT                                                    PAGE 59
LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1878                KK  A07E.7   BASIN
1879                KM   SUB-BASIN A07E.7
1880                BA   0.006
1881                LG    0.14    0.25    5.80    0.26      67
1882                UC   0.125   0.108
1883                UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1884                UA   100
                    *
                    * *** COMBINE BASIN A07E.7 AND RA07F1  ***************************
                    *

1885                KK  CA07E7
1886                HC       2
                    *
                    * ROUTE RA07E7 IS 1820 FT WITH A SLOPE OF .0042
                    * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
                    * *** ROUTE FLOW FROM CA07E7 TO CA07E4 ***********************************
                    *

1887                KK  RA07E7
1888                RS       3    FLOW       0
1889                RC    0.03    0.02    0.03    1820  0.0042
1890                RX       0       1      13      23      53      83     108     109
1891                RY      14       6       0       0       6       6       7      15
                    *

1892                KK  A07G.2   BASIN
1893                KM   SUB-BASIN A07G.2
1894                BA   0.028
1895                LG    0.27    0.27    4.70    0.35      24
```



```
1896                UC   0.553   0.939
1897                UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1898                UA   100
                    *
                    * ROUTE RA07G2 IS 1400 FT WITH A SLOPE OF .0107
                    * CROSS SECTION IS DINERO ROAD (MEASURED)
                    * *** ROUTE FLOW FROM A07G2 TO CA07E3 ***********************************
                    *

1899                KK  RA07G2
1900                RS       4    FLOW       0
1901                RC    0.03    0.02    0.03    1400  0.0107
1902                RX       0      10      20      30      40      50      60      70
1903                RY       2       1       0       0       0       0       1       2
                    *

1904                KK  A07E.3   BASIN
1905                KM   SUB-BASIN A07E.3
1906                BA   0.062
1907                LG    0.25    0.19    6.60    0.17      31
1908                UC   0.317   0.218
1909                UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1910                UA   100
                    *
                    * *** COMBINE BASIN A07E.3 AND RA07G2  ***************************
                    *
1                                                HEC-1 INPUT                                                    PAGE 60
LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1911                KK  CA07E3
1912                HC       2
                    *

1913                KK  DI7E.3
1914                DT  DI7E.3     0.1
1915                DI       0     100    1000   10000
1916                DQ       0     100    1000   10000
                    *
                    * ROUTE RA07E3 IS 1650 FT WITH A SLOPE OF .0048
                    * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
                    * *** ROUTE FLOW FROM CA07E3 TO CA07E4 ***********************************
                    *

1917                KK  RA07E3
1918                RS       3    FLOW       0
1919                RC    0.03    0.02    0.03    1650  0.0048
1920                RX       0      10      20      30      40      50      60      70
1921                RY       2       1       0       0       0       0       1       2
                    *

1922                KK  A07E.2   BASIN
1923                KM   SUB-BASIN A07E.2
1924                BA   0.025
1925                LG    0.24    0.26    5.40    0.26      29
1926                UC   0.316   0.330
1927                UA     0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1928                UA   100
                    *

1929                KK  DI7E.2
1930                DT  DI7E.2    0.04
1931                DI       0     100    1000   10000
```

```
1932    DQ       0     100    1000   10000
        *
        * ROUTE RA07E2 IS 1700 FT WITH A SLOPE OF .0004
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM CA07E2 TO CA07E4 ***********************************
        *

1933    KK  RA07E2
1934    RS      12     FLOW       0
1935    RC    0.03    0.02    0.03    1700  0.0004
1936    RX       0      10      20      30      40      50      60      70
1937    RY       2       1       0       0       0       0       1       2
        *

1938    KK  A07E.1   BASIN
1939    KM   SUB-BASIN A07E.1
1940    BA   0.037
1941    LG    0.25    0.15    8.00    0.10      60
1942    UC   0.427   0.434
1943    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1944    UA     100
        *
```



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

1945    KK  DI7E.1
1946    DT  DI7E.1     1.4
1947    DI       0     100    1000   10000
1948    DQ       0     100    1000   10000
        *
        * ROUTE RA07E1 IS 1200 FT WITH A SLOPE OF .0025
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM CA07E1 TO CA07E4 ***********************************
        *

1949    KK  RA07E1
1950    RS       4     FLOW       0
1951    RC    0.03    0.02    0.03    1200  0.0025
1952    RX       0      10      20      30      40      50      60      70
1953    RY       2       1       0       0       0       0       1       2
        *

1954    KK  A07E.6   BASIN
1955    KM   SUB-BASIN A07E.6
1956    BA   0.020
1957    LG    0.12    0.15    7.60    0.13      74
1958    UC   0.156   0.106
1959    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1960    UA     100
        *

1961    KK  DI7E.6
1962    DT  DI7E.6    0.12
1963    DI       0     100    1000   10000
1964    DQ       0     100    1000   10000
        *
        * ROUTE RA07E6 IS 1400 FT WITH A SLOPE OF .0057
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM A07E6 TO CA07E5 ************************************
        *

1965    KK  RA07E6
```



```
1966    RS       4     FLOW       0
1967    RC    0.03    0.02    0.03    1400  0.0057
1968    RX       0      10      20      30      40      50      60      70
1969    RY       2       1       0       0       0       0       1       2
        *

1970    KK  A07E.5   BASIN
1971    KM   SUB-BASIN A07E.5
1972    BA   0.035
1973    LG    0.23    0.15    8.40    0.09      57
1974    UC   0.315   0.258
1975    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1976    UA     100
        *
        * *** COMBINE BASIN A07E.5 AND RA07E6  ***************************
        *
```



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

1977    KK  CA07E5
1978    HC       2
        *
        * ROUTE RA07E5 IS 900 FT WITH A SLOPE OF .0033
        * CROSS SECTION IS PARADISE RESORT STREET SECTION (MEASURED)
        * *** ROUTE FLOW FROM CA07E5 TO CA07E4 ************************************
        *

1979    KK  RA07E5
1980    RS       2     FLOW       0
1981    RC    0.03    0.02    0.03     900  0.0033
1982    RX       0      10      20      30      40      50      60      70
1983    RY       2       1       0       0       0       0       1       2
        *

1984    KK  A07E.4   BASIN
1985    KM   SUB-BASIN A07E.4
1986    BA   0.057
1987    LG    0.23    0.16    8.00    0.10      57
1988    UC   0.384   0.289
1989    UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
1990    UA     100
        *
        * *** COMBINE BASIN A07E.4, RA07E1, RA07E2, RA07E3, AND RA07E5  *************
        *

1991    KK  CA07E4
1992    HC       5
        *

1993    KK  DI7E.4
1994    DT  DI7E.4     0.7
1995    DI       0     100    1000   10000
1996    DQ       0     100    1000   10000
        *
        * *** COMBINE CA07E4, AND RA07E7  *************
        *

1997    KK   CA07E
1998    HC       3
        *

1999    KK  DIA07E
```

```
2000          DT  DIA07E     2.8
2001          DI       0     100    1000   10000
2002          DQ       0     100    1000   10000
              *
              *
              * ROUTE RA07E IS 1771 FT WITH A SLOPE OF .004
              * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
              * *** ROUTE FLOW FROM CA07E TO CA07C ***********************************
              *
```



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

2003          KK   RA07E
2004          RS       2    FLOW       0
2005          RC    0.03    0.03    0.03    1771   0.004
2006          RX       0     100     112     122     134     154     189     689
2007          RY       8       6       0       0       6       7       7       9
              *

2008          KK    A07C   BASIN
2009          KM  SUB-BASIN A07C
2010          BA   0.175
2011          LG    0.34    0.31    4.90    0.30       5
2012          UC   0.681   0.462
2013          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2014          UA     100
              *
              * *** COMBINE BASIN A07C AND RA07E ************************************
              *

2015          KK   CA07C
2016          HC       2
              *
              * ROUTE RA07C IS 1051 FT WITH A SLOPE OF .0067
              * CROSS SECTION IS CHANNEL ALONG UNION HILLS RD (MEASURED)
              * *** ROUTE FLOW FROM CA07C TO CA07D ***********************************
              *

2017          KK   RA07C
2018          RS       1    FLOW       0
2019          RC    0.03    0.03    0.03    1051  0.0067
2020          RX       0      50      62      72      84     104     139     640
2021          RY       9       6       0       0       6       7       7       9
              *

2022          KK    A07H   BASIN
2023          KM  SUB-BASIN A07H
2024          BA   0.093
2025          LG    0.23    0.21    4.70    0.44      47
2026          UC   0.339   0.165
2027          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2028          UA     100
              *
              * ROUTE RA07H IS 2386 FT WITH A SLOPE OF .0461
              * CROSS SECTION IS THE FARM FIELDS IN THE AGUA FRIA RIVER (MEASURED)
              * *** ROUTE FLOW FROM CA07H TO CA07D ***********************************
              *

2029          KK   RA07H
2030          RS       3    FLOW       0
2031          RC    0.03    0.03    0.03    2386  0.0461
2032          RX       0      14     125     250     500     800    1000    1014
```



```
2033          RY       7       0       0       0       0       0       0       7
              *
              * *** RECOVER DIVERTED FLOW FROM A09AI ********************************
              *
```



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

2034          KK  DA09AI
2035          DR   A09AI
              *

2036          KK  RA09AI
2037          RS      12    FLOW       0
2038          RC    0.03    0.03    0.03    3000   0.002
2039          RX       0      50     100     150     200     250     300     500
2040          RY       7       6       5       5       0       0       5       6
              *

2041          KK    A08B   BASIN
2042          KM  SUB-BASIN A08B
2043          BA   0.099
2044          LG    0.19    0.27    3.74    0.66      35
2045          UC   0.608   0.413
2046          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2047          UA     100
              *
              * *** COMBINE BASIN A09AI AND R80BE ************************************
              *

2048          KK   CA08B
2049          HC       2
              *
              * ROUTE RA08B IS 2925 FT WITH A SLOPE OF .001
              * CROSS SECTION IS 115TH AVE (MEASURED)
              * *** ROUTE FLOW FROM CA08B TO CA07D ***********************************
              *

2050          KK   RA08B
2051          RS      12    FLOW       0
2052          RC    0.03    0.03    0.03    2925   0.001
2053          RX       0      50     100     150     200     250     300     500
2054          RY       7       6       5       5       0       0       5       6
              *

2055          KK    A07D   BASIN
2056          KM  SUB-BASIN A07D
2057          BA   0.229
2058          LG    0.49    0.02    4.10    0.67       1
2059          UC   1.327   1.248
2060          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2061          UA     100
              *
              * *** COMBINE BASIN A07D, RA08B, RA07H, AND RA07C *********************
              *

2062          KK   CA07D
2063          HC       4
              *
              * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
              * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
              *
```

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

2064          KK   RA07D
2065          RS       8    FLOW       0
2066          RC    0.03    0.03    0.03    4828  0.0017
2067          RX       0     100     112     147     159     179     214     580
2068          RY       8       6       0       0       6       7       7       9
              *

2069          KK    S30D   BASIN
2070          KM  SUB-BASIN S30D
2071          BA   0.131
2072          LG    0.25    0.17    6.80    0.15      30
2073          UC   0.638   0.385
2074          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2075          UA     100
              *
              * ROUTE RS30D IS 6176 FT WITH A SLOPE OF .0023
              * CROSS SECTION IS 99TH AVENUE
              * *** ROUTE S30D THROUGH S30C ****************************************
              *

2076          KK   RS30D
2077          RS      10    FLOW       0
2078          RC     .02     .02     .02    6176  0.0023
2079          RX       0       1      85      95     109     134     239     240
2080          RY      12       6       5       0       0       5       6      12
              *

2081          KK    S30C   BASIN
2082          KM  SUB-BASIN S30C
2083          BA   0.454
2084          LG    0.23    0.15    7.30    0.13      36
2085          UC   0.892   0.703
2086          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2087          UA     100
              *
              * RECOVER DIVERTED FLOW FROM A09FI
              *

2088          KK  DA09FI
2089          DR   A09FI
              *

2090          KK  RA09FI
2091          RS      10    FLOW       0
2092          RC     .02     .02     .02    7000  0.0023
2093          RX       0       1      85      95     109     134     239     240
2094          RY      12       6       5       0       0       5       6      12
              *
1                                          HEC-1 INPUT                                          PAGE 66

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

2095          KK     XX1
2096          HC       3
              *

2097          KK    S30B   BASIN
2098          KM  SUB-BASIN S30B
2099          BA   0.399
```



```
2100          LG    0.19    0.29    5.80    0.21      24
2101          UC   0.995   0.918
2102          UA       0     4.5    12.6    23.2    35.8    50.0    64.2    76.8    87.4    95.5
2103          UA     100
              *
              * *** COMBINE BASIN S30C, S30B, AND RS30D ****************************
              *

2104          KK   CS30B
2105          HC       2
              *
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **********************
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
              *

2106          KK  DS30BO
2107          DT  DS30BI
2108          DI       1     250     550     750    1000    1500    1750    2000
2109          DQ      .1      .2      .3     200     450     950    1200    1450
              *
              * ROUTE RS30BW IS 5060 FT WITH A SLOPE OF .0008
              * CROSS SECTION IS DEL WEBB BLVD
              * *** ROUTED S30BO THROUGH S30A ****************************************
              *

2110          KK  RS30BW
2111          RS       9    FLOW       0
2112          RC     .02    0.02     .02    5060  0.0008
2113          RX       0       1     100     120     140     155     239     240
2114          RY      12       6       5       0       0       5       6      12
              *

2115          KK    S30A   BASIN
2116          KM  SUB-BASIN S30A
2117          BA   0.531
2118          LG    0.22    0.21    6.40    0.21      28
2119          UC   1.005   0.674
2120          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2121          UA     100
              *
              * *** COMBINE BASIN S30A AND RS30B ***************************************
              *
1                                          HEC-1 INPUT                                          PAGE 67

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

2122          KK   CS30A
2123          HC       2
              *
              * ********************************************************************
              * ********************************************************************
              * ******** THE FOLLOWING PORTION WAS EXTRACTED FROM THE GLENDALE/PEORIA
              * ******** ADMPU MODEL CREATED BY ENTELLUS, DATED OCTOBER 21, 2000.
              * ******** FILE NAME: 100yr6hr.DAT
              * ********************************************************************
              * ********************************************************************
              *
              * *** DIVERSION DS30AO ************************************************
              * *** DIVERTED  MAIN (WEST) DIVERTED (SOUTH)  **************************
              *
              * THERE IS A DIVERSION AT THIS LOCATION. THE DEL WEBB CHANNEL CAN CARRY
              * 550 CFS, THE REST OF THE FLOW OVERFLOWS TO THE SOUTH.
```

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

2124                KK  DS30AO
2125                DT  DS30AI
2126                DI       1     250     550     750    1000    1500    1750    2000
2127                DQ      .1      .2      .3     200     450     950    1200    1450
                    *
                    * *** ROUTE RS30AW  ***********************************************
                    *
                    * ROUTE RS30AW IS 4919 FT WITH A SLOPE OF .0043
                    * CROSS SECTION IS DEL WEBB BLVD
                    *
                    * *** ROUTE FLOW FROM CS30A TO CS30 **********************************
                    *
                    * DDM   ***** Preserved *****

2128                KK  RS30AW
2129                RS       5    FLOW       0
2130                RC    0.03    0.02    0.03    4919  0.0043
2131                RX       0       1     110     125     140     155     160     161
2132                RY      15       7       7       0       0       7       7      15
                    *
                    *
                    * DDM   ***** Preserved *****

2133                KK     S30   BASIN
2134                KM   SUB-BASIN S30
2135                KM   6-HOUR RAINFALL, PATTERN NO. 1.00 WAS USED TO FIND TC & R FOR THIS BASIN
2136                KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
2137                KM     L = 1.12  Kb = .040  Adj. Slope =   27.0
2138                BA    .321
2139                LG    0.22    0.26    4.55    0.43      27
2140                UC   0.596   0.436
2141                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2142                UA     100
                    *
                    * *** COMBINE BASIN S30 AND RS30A ***********************************
                    *
                    * DDM   ***** Preserved *****
```



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

2143                KK    CS30
2144                HC       2
                    *
                    * *** ROUTE RS30  ****************************************************
                    *
                    * ROUTE RS30 IS 691 FT WITH A SLOPE OF .0058
                    * CROSS SECTION IS A CHANNEL ALONG BELL RD (MEASURED)
                    *
                    * *** ROUTE FLOW FROM CS30 TO CA07B **********************************
                    *
                    * DDM   ***** Preserved *****

2145                KK    RS30
2146                RS       1    FLOW       0
2147                RC    0.03    0.02    0.03     691  0.0058
2148                RX       0      26     136     197     212     227     242     742
2149                RY       9       8       8       7       0       0       7       9
                    *
                    * DDM   ***** Preserved *****
```



```
                    *
                    * *** ROUTE RA07D  ***************************************************
                    *
                    * ROUTE RA07D IS 4828 FT WITH A SLOPE OF .0017
                    * CROSS SECTION IS A CHANNEL AND 115TH AVE (MEASURED)
                    *
                    * *** ROUTE FLOW FROM CA07D TO CA07B **********************************
                    *
                    * DDM   ***** Preserved *****
                    * *****KK RA07D
                    * *****RS      5    FLOW       0
                    * *****RC  0.03    0.03    0.03    4828  0.0017
                    * *****RX      0     100     112     147     159     179     214     580
                    * *****RY      8       6       0       0       6       7       7       9
                    *
                    *
                    * DDM   ***** Preserved *****

2150                KK    A07B   BASIN
2151                KM   SUB-BASIN A07B
2152                KM   6-HOUR RAINFALL, PATTERN NO. 1.15 WAS USED TO FIND TC & R FOR THIS BASIN
2153                KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
2154                KM     L = 1.58  Kb = .030  Adj. Slope =   41.0
2155                BA    .649
2156                LG    0.16    0.31    4.60    0.34      18
2157                UC   0.533   0.339
2158                UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
2159                UA     100
                    *
                    * *** STORAGE ROUTING LA07B *****************************************
                    * *** CANYON RIDGE WEST RESIDENTIAL DEVELOPMENT STORAGE (ACCOUNTED) *******
                    * DDM   ***** Preserved *****
```



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

2160                KK   LA07B
2161                DT  LA07BD    19.2
2162                DI       0     100    1000   10000
2163                DQ       0     100    1000   10000
                    *
                    *
                    * *** COMBINE LA07B, RA07D, AND RS30  ********************************
                    *
                    * DDM   ***** Preserved *****

2164                KK   CA07B
2165                KO                                   21
2166                HC       3
                    *
2167                ZZ
```

1

```
          SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   73        CBA
              V
              V
   80       RCBA
              .
```

```
 83          .        P28
             .          .
             .          .
 90       CP28............
             .
             .-------->   DB28
 95
 93       DT28
             .
             .
 98          .        CBB
             .          V
             .          V
105          .       RCBB
             .          .
             .          .
108      CP28a...........
            V
            V
111       R28a
             .
             .
114          .        P27
             .          .
             .          .
123          .          .-------->   DB27
121          .       DT27
             .          .
             .          .
126       CP27............
             .
             .
129          .       P27A
             .          .
             .          .
138          .          .-------->   DB27a
136          .      DT27a
             .          .
             .          .
141          .          .       P27B
             .          .         .
             .          .         .
150          .          .         .-------->   DB27b
148          .          .      DT27b
             .          .         .
             .          .         .
153          .          .         .         CBL
             .          .         .           .
             .          .         .           .
160       CCBL.......................................
            V
            V
163       RCBL
             .
             .
168          .        CBK
             .          .
             .          .
175       CCBK............
            V
            V
178       RCBK
             .
```



```
181          .        P14
             .          .
             .          .
190          .          .-------->   RB14
188          .       RT14
             .          .
             .          .
193       CP14............
             .
             .
196          .        P15
             .          .
             .          .
205          .          .-------->   DB15
203          .       DT15
             .          .
             .          .
208          .          .        CBJ
             .          .         .
             .          .         .
215       CP15........................
            V
            V
218        R15
             .
             .
221          .        CBH
             .          V
             .          V
228          .       RCBH
             .          .
             .          .
233          .          .       P25S
             .          .         .
             .          .         .
240          .      CP25S............
             .          .
             .          .
243       AFR0............
             .
             .
246          .         E1
             .          V
             .          V
253          .        RE1
             .          .
             .          .
256          .          .         E2
             .          .          V
             .          .          V
263          .          .        RE2
             .          .         .
             .          .         .
266          .          .         .         P13
             .          .         .           .
             .          .         .           .
275          .          .         .           .-------->   DB13
273          .          .         .        DT13
             .          .         .           .
             .          .         .           .
278          .       CP13........................
             .          V
             .          V
```

```
281          .        R13
             .         .
284          .         .        P12
             .         .         .
293          .         .         .-------->   DB12
291          .         .       DT12
             .         .         .
296          .       CP12.........
             .         .
299          .         .         E3
             .         .         V
             .         .         V
306          .         .        RE3
             .         .         .
309          .         .         .        P10
             .         .         .         .
318          .         .         .         .-------->   DB10
316          .         .         .       DT10
             .         .         .         .
321          .         .       CP10.........
             .         .         V
             .         .         V
324          .         .        R10
             .         .         .
327          .         .         .        P11
             .         .         .         .
336          .         .         .         .-------->   DB11
334          .         .         .       DT11
             .         .         .         .
339          .         .       CP11.........
             .         .         .
342          .         .         .         E4
             .         .         .         V
             .         .         .         V
349          .         .         .        RE4
             .         .         .         .
356          .         .         .         .          P9
             .         .         .         .           .
365          .         .         .         .           .-------->    DB9
363          .         .         .         .         DT9
             .         .         .         .           .
368          .         .         .         .           .        HV1
             .         .         .         .           .          .
375          .         .         .        CP9.........................
             .         .         .         V
             .         .         .         V
378          .         .         .         R9
             .         .         .         .
             .         .         .         .
```



```
385          .         .         .         .          P8
             .         .         .         .           .
394          .         .         .         .           .-------->    DB8
392          .         .         .         .         DT8
             .         .         .         .           .
397          .         .         .         .           .         P7
             .         .         .         .           .          .
406          .         .         .         .           .          .-------->    DB7
404          .         .         .         .           .        DT7
             .         .         .         .           .          .
409          .         .         .        CP7.........................
             .         .         .         V
             .         .         .         V
412          .         .         .         R7
             .         .         .         .
418          .         .         .         .          P6
             .         .         .         .           .
427          .         .         .         .           .-------->    DB6
425          .         .         .         .         DT6
             .         .         .         .           .
430          .         .         .        CP6...........
             .         .         .         .
433          .       HPVLY........................
             .         .
436          .         .      A11MA
             .         .        .
444          .         .        .-------->  DA11MA
443          .         .     A11MAQ
             .         .        V
             .         .        V
447          .         .     SA11MA
             .         .        V
             .         .        V
454          .         .     RA11MA
             .         .        .
459          .         .        .      A11MB
             .         .        .        .
467          .         .        .        .-------->  DA11MB
466          .         .        .     A11MBQ
             .         .        .        V
             .         .        .        V
470          .         .        .     SA11MB
             .         .        .        .
477          .         .        .        .      A11NA
             .         .        .        .        V
             .         .        .        .        V
484          .         .        .        .     SA11NA
             .         .        .        .        V
             .         .        .        .        V
491          .         .        .        .     RA11NA
             .         .        .        .        .
```

```
496          .           .     CA11MB.......................
             .           .         V
             .           .         V
498          .           .     RA11MB
             .           .
503          .           .           A11O
             .           .              V
             .           .              V
510          .           .          SA11O
             .           .              V
             .           .              V
517          .           .          RA11O
             .           .
522          .           .                A11KB
             .           .                   V
             .           .                   V
529          .           .               SA11KB
             .           .
536          .           .                                A11KA
             .           .                                   V
             .           .                                   V
543          .           .                              SA11KA
             .           .                                   V
             .           .                                   V
550          .           .                              RA11KA
             .           .
555          .           .          CA11KB.......................
             .           .              V
             .           .              V
557          .           .          RA11KB
             .           .
562          .           .                A11G
             .           .                   V
             .           .                   V
569          .           .               RA11GN
             .           .
574          .           .                                A11KC
             .           .                                   V
             .           .                                   V
581          .           .                              SA11KC
             .           .
588          .           .          CA11KC.......................
             .           .              V
             .           .              V
590          .           .          RA11KC
             .           .
595          .           .                A11J
             .           .                   V
             .           .                   V
602          .           .               SA11J
             .           .
609          .           .     CA11J........................
             .           .
             .           .
```



```
611          .           .           A11L
             .           .
619          .           .           .-------->   DA11L
618          .           .          DA11LQ
             .           .              V
             .           .              V
622          .           .          RA11L
             .           .
627          .           .                A11I
             .           .
635          .           .                .-------->   DA11I
634          .           .               DA11IQ
             .           .
638          .           .     CA11I........................
             .           .         V
             .           .         V
640          .           .     RA11I
             .           .
645          .           .          A11EA
             .           .              V
             .           .              V
652          .           .          RA11EA
             .           .
657          .           .                A11EB
             .           .
664          .           .     CA11EB.......................
             .           .
666          .           .             41
             .           .              V
             .           .              V
673          .           .            B41
             .           .
680          .           .                  42
             .           .                   V
             .           .                   V
687          .           .                 B42
             .           .
694          .           .            C41............
             .           .              V
             .           .              V
696          .           .           RC41
             .           .
701          .           .                A11F
             .           .
708          .           .          CA11F............
             .           .
710          .           .     CA11E............
             .           .         V
             .           .         V
712          .           .     RA11E
             .           .
```

```
717                 A09U
                      .
725                   .-------> A09UI
724               DA09U
                      V
                      V
728               RA09UW
                      .
733                   .       A09T
                      .         .
740               CA09T.........
                      .
743                   .-------> A09TI
742               DA09T
                      V
                      V
746               RA09TW
                      .
751                   .       A11A
                      .         .
759                   .         .-------> DA11A
758                   .     DA11AQ
                      .         .
762           CX23.........................
                 V
                 V
764           RX23
                 .
769                 S1
                    .
776                 .         P2
                    .         .
785                 .         .-------> RB2
783                 .       RT2
                    .         .
788           CS1..........................
                 V
                 V
791           RS1
                 .
794                 S2
                    .
801                 .         S3
                    .         .
808           CS2..........................
                 V
                 V
811           RS2
```



```
814                 P3
                    .
823                 .-------> RB3
821               RT3
                    .
826           CP3............
                 .
829               P4b
                    .
838                 .-------> RB4b
836               RT4b
                    .
841                 .         S4
                    .         .
848                 .         .         P1
                    .         .         .
857                 .         .         .-------> DB1
855                 .         .       DT1
                    .         .         .
860                 .         .     CP1............
                    .         .         .
863                 .         .       HV2
                    .         .         V
870                 .         .       RHV2
                    .         .         .
875                 .         .         .-------> DBHV2
873                 .         .     DTHV2
                    .         .         .
878                 .         .         .       P4a
                    .         .         .         .
887                 .         .         .         .-------> DB4a
885                 .         .         .       DT4a
                    .         .         .         .
890           SOUTH.............................................
                 .
893               N11O
                    .
901                 .-------> N11OI
900               DN11O
                      V
                      V
904               RN11OW
                      .
910                 .         .<------- A09TI
909                 .     DRA09T
                    .         V
```

```
                                                  V
911          .          .          .          .     RA09TS
             .          .          .          .          .
916          .          .          .          .          .        A09R
             .          .          .          .          .          .
923          .          .          .      CA09R.......................
             .          .          .          .
926          .          .          .          .-------->   A09RI
925          .          .          .      DA09R
             .          .          .          V
             .          .          .          V
929          .          .          .     RA09RW
             .          .          .          .
934          .          .          .          .       A09S
             .          .          .          .          .
942          .          .          .          .          .-------->   DA09S
941          .          .          .          .     DA09SQ
             .          .          .          .          .
945          .          .          .      CA09S............
             .          .          .          V
             .          .          .          V
947          .          .          .     RA09SW
             .          .          .          .
952          .          .          .          .       A09QA
             .          .          .          .          .
959          .          .          .     CA09QA............
             .          .          .          .
962          .          .          .          .-------->  A09QAI
961          .          .          .     DA09QA
             .          .          .          V
             .          .          .          V
965          .          .          .     RA09QW
             .          .          .          .
970          .          .          .          .       A99YA
             .          .          .          .          .
977          .          .          .     CA99YA............
             .          .          .          V
             .          .          .          V
979          .          .          .     RA99YA
             .          .          .          .
984          .          .          .          .       A99YB
             .          .          .          .          .
991          .          .     CA99YB.......................
             .          .          .
993       AFR1........................
             .
             .
996          .          .<-------   A09UI
995          .     BA09UI
             .          V
```



```
             .          V
997          .     RA09US
             .          .
             .          .
1002         .          .      N11NB
             .          .          .
             .          .          .
1009         .     CN11NB............
             .          V
             .          V
1011         .     RN11NW
             .          .
             .          .
1017         .          .          .<-------   N11OI
1016         .          .      BN11OI
             .          .          V
             .          .          V
1018         .          .     RN11OS
             .          .          .
             .          .          .
1023         .          .          .        N11M
             .          .          .          .
             .          .          .          .
1030         .      CN11M........................
             .          .
             .          .
1033         .          .-------->   N11MI
1032         .      DN11M
             .          V
             .          V
1036         .     RN11MS
             .          .
             .          .
1041         .          .       N11J
             .          .          .
             .          .          .
1049         .          .          .-------->  LN11JD
1048         .          .      LN11J
             .          .          .
             .          .          .
1052         .      CN11J............
             .          .
             .          .
1055         .          .-------->   N11JI
1054         .      DN11J
             .          V
             .          V
1058         .     RN11JW
             .          .
             .          .
1064         .          .          .<-------   N11MI
1063         .          .     DRN11M
             .          .          V
             .          .          V
1065         .          .     RN11MW
             .          .          .
             .          .          .
1070         .        CX4............
             .          V
             .          V
1072         .        RX4
             .          .
             .          .
1077         .          .       A09O
```

```
                                                  V
                                                  V
1084                                         SA09O
                                                  .
                                                  .
1092                                              .<-------   A09RI
1091                                         BA09RI
                                                  V
                                                  V
1093                                         RA09RS
                                                  .
                                                  .
1098                         CA09O.......................
                                                  .
                                                  .
1101                                  .------->   A09OI
1100                         DA09O
                                  V
                                  V
1104                        RA09OW
                                  .
                                  .
1109                                       A09P
                                                  V
                                                  V
1116                                         SA09P
                                                  .
                                                  .
1123                         CA09P............
                                  V
                                  V
1125                         RA09P
                                  .
                                  .
1131                                              .<-------  A09QAI
1130                                       BA09QA
                                                  V
                                                  V
1132                                       RA09QB
                                                  .
                                                  .
1137                                              .      A09QB
                                                  .
                                                  .
1144                         CA09Q.......................
                                                  .
                                                  .
1147                                  .------->   A09QI
1146                         DA09Q
                                  V
                                  V
1150                        RA09QW
                                  .
                                  .
1155                                       A10A
                                                  .
                                                  .
1162                         CA10A............
                                  V
                                  V
1164                         RA10A
                                  .
                                  .
1169                                       A99X
```



```
                                                  .
                                                  .
1176                         CA99X............
                                                  .
                                                  .
1178                    AFR2............
                                                  .
                                                  .
1181                                  .<-------   A09OI
1180                        BA09OI
                                  V
                                  V
1182                        RA09OS
                                  .
                                  .
1187                                       A09K
                                                  .
                                                  .
1199                                              .------->   A09KI
1194                                       DA09K
                                                  .
                                                  .
1202                           CX7............
                                  V
                                  V
1205                           RX7S
                                  .
                                  .
1214                                      N11NA
                                                  V
                                                  V
1221                                      RN11NA
                                                  .
                                                  .
1226                                              .      N11NC
                                                  .
                                                  .
1233                                      CN11NC............
                                                  .
                                                  .
1237                                              .------->   N11NP
1235                                      DN11NC
                                                  V
                                                  V
1240                                      RN11NC
                                                  .
                                                  .
1246                                              .      N11ND
                                                  .
                                                  .
1253                                              .        N11K
                                                  .
                                                  .
1260                                       CN11K........................
                                                  .
                                                  .
1264                                              .------->   N11KP
1263                                      DN11KS
                                                  V
                                                  V
1267                                       RN11K
                                                  .
                                                  .
1273                                              .------->     X5I
```

```
1272          .          .        DX5
              .          .         V
              .          .         V
1276          .          .       RX5W
              .          .         .
              .          .         .
1281          .          .         .        N11H
              .          .         .          .
              .          .         .          .
1288          .          .      CN11H............
              .          .         V
              .          .         V
1290          .          .      RN11H
              .          .         .
              .          .         .
1300          .          .         .          .<-------   N11JI
1299          .          .         .     BN11JI
              .          .         .          V
              .          .         .          V
1301          .          .         .     RN11JS
              .          .         .          .
              .          .         .          .
1306          .          .         .          .       N11G
              .          .         .          .         .
              .          .         .          .         .
1313          .          .      CN11G........................
              .          .         V
              .          .         V
1315          .          .      RN11G
              .          .         .
              .          .         .
1324          .          .         .       N11DA
              .          .         .          .
              .          .         .          .
1332          .          .         .          .-------> LDAOUT
1331          .          .         .     LN11DA
              .          .         .          V
              .          .         .          V
1335          .          .         .     SN11DA
              .          .         .          .
              .          .         .          .
1344          .          .         .          .-------> D11DAS
1342          .          .         .     N11DAW
              .          .         .          V
              .          .         .          V
1347          .          .         .     RN11DA
              .          .         .          .
              .          .         .          .
1356          .          .         .          .       N11FB
              .          .         .          .         .
              .          .         .          .         .
1366          .          .         .          .         .-------> LN1FBD
1363          .          .         .          .     LN11FB
              .          .         .          .         .
              .          .         .          .         .
1369          .          .         .     CN11FB............
              .          .         .          .
              .          .         .          .
1372          .          .      C98RGL............
              .          .         V
              .          .         V
1375          .          .      RN11FB
              .          .         .
              .          .         .
```



```
1387          .          .         .          .<-------   A09KI
1384          .          .         .     DRA09K
              .          .         .          V
              .          .         .          V
1388          .          .         .     RA09KS
              .          .         .          .
              .          .         .          .
1397          .          .         .          .       N11FA
              .          .         .          .         .
              .          .         .          .         .
1406          .          .         .          .         .-------> LN1FAD
1403          .          .         .          .     LN11FA
              .          .         .          .         .
              .          .         .          .         .
1409          .          .         .          .         .       A09GA
              .          .         .          .         .         .
              .          .         .          .         .         .
1418          .          .         .          .         .         .-------> L09GAD
1415          .          .         .          .         .     LA09GA
              .          .         .          .         .         .
              .          .         .          .         .         .
1421          .          .      CN11FA.......................................
              .          .         V
              .          .         V
1424          .          .      RN11FA
              .          .         .
              .          .         .
1433          .          .         .       A09GB
              .          .         .          .
              .          .         .          .
1443          .          .         .          .-------> L09GBD
1440          .          .         .     LA09GB
              .          .         .          .
              .          .         .          .
1446          .          .       CA09G............
              .          .         .
              .          .         .
1450          .          .         .------->   A09GI
1449          .          .       DA09G
              .          .         V
              .          .         V
1453          .          .      RA09GW
              .          .         .
              .          .         .
1462          .       CX8............
              .          V
              .          V
1464          .       RX8W
              .          .
              .          .
1473          .          .       A09H
              .          .         .
              .          .         .
1483          .          .         .-------> LA09HD
1480          .          .       LA09H
              .          .         .
              .          .         .
1486          .     CA09H1............
              .          .
              .          .
1489          .          .       A09J
              .          .         .
              .          .         .
1497          .          .         .-------> LA09JD
```

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1496          .          .      LA09J
              .          .          .
              .          .          .
1501          .          .          .------->   A09JI
1500          .          .      DA09J
              .          .          V
              .          .          V
1504          .          .     RA09JS
              .          .          .
              .          .          .
1509          .      CA09H...........
              .          V
              .          V
1512          .      RA09H
              .          .
              .          .
1518          .          .          .<-------   A09QI
1517          .          .     BA09QI
              .          .          V
              .          .          V
1519          .          .     RA09QS
              .          .          .
              .          .          .
1524          .          .          .       A09M
              .          .          .          .
              .          .          .          .
1532          .          .          .          .------->  LA09MD
1531          .          .          .      LA09M
              .          .          .          .
              .          .          .          .
1535          .          .      CA09M...........
              .          .          V
              .          .          V
1537          .          .      RA09M
              .          .          .
              .          .          .
1542          .          .          .       A09N
              .          .          .          .
              .          .          .          .
1549          .          .      CA09N...........
              .          .          V
              .          .          V
1551          .          .      LA09N
              .          .          V
              .          .          V
1556          .          .      RA09N
              .          .          .
              .          .          .
1562          .          .          .          .<-------   A09JI
1561          .          .          .     DRA09J
              .          .          .          V
              .          .          .          V
1563          .          .          .     RA09JW
              .          .          .          .
              .          .          .          .
1568          .          .          .          .       A09L
              .          .          .          .         .
              .          .          .          .         .
1575          .          .      CA09L........................
              .          .          V
              .          .          V
1577          .          .      LA09L
              .          .          V
              .          .          V
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1582          .          .     RA09LS
              .          .          .
              .          .          .
1587          .          .          .      A09IH
              .          .          .          .
              .          .          .          .
1595          .          .     CA09IH...........
              .          .          V
              .          .          V
1597          .          .     LA09IH
              .          .          .
              .          .          .
1602          .          .          .       A09I
              .          .          .          .
              .          .          .          .
1610          .          .          .          .------->  LA09ID
1609          .          .          .      LA09I
              .          .          .          .
              .          .          .          .
1613          .       CX10........................
              .          V
              .          V
1615          .       RX10
              .          .
              .          .
1620          .          .       A99V
              .          .          .
              .          .          .
1627          .      CA99V...........
              .          .
              .          .
1629          .          .        A10
              .          .          .
              .          .          .
1636          .          .          .       A99W
              .          .          .          .
              .          .          .          .
1644          .          .          .          .------->  LA99WD
1643          .          .          .      LA99W
              .          .          .          .
              .          .          .          .
1647       AFR3...................................
              .
              .
1650          .          .<-------   A09GI
1649          .      DRA09G
              .          V
              .          V
1651          .     RA09GS
              .          .
              .          .
1656          .          .       A09F
              .          .          .
              .          .          .
1664          .          .          .------->  LA09FD
1663          .          .      LA09F
              .          .          .
              .          .          .
1667          .      CA09F...........
              .          .
              .          .
1670          .          .------->   A09FI
1669          .      DA09F
              .          V
```

```
                                                  V
1673            .       RA09FW
                .                                 .
1678            .                A09E             .
                .                                 .
1686            .                                 .-------> LA09ED
1685            .              LA09E              .
                .                                 .
1689            .       CA09E............
                .                  V
                .                  V
1691            .       RA09E
                .                                 .
1696            .                A09D             .
                .                                 .
1704            .                                 .-------> LA09DD
1703            .              LA09D              .
                .                                 .
1707            .       CA09C*...........
                .                  V
                .                  V
1709            .       RA09C*
                .                                 .
1714            .                A09C             .
                .                                 .
1721            .       CA09C............
                .                  V
                .                  V
1723            .       RA09C
                .                                 .
1728            .                A09B             .
                .                   V             .
                .                   V             .
1735            .              RA09B              .
                .                                 .
1740            .                                 .        A09A
                .                                 .          .
1747            .       CA09A........................        .
                .                                 .
1750            .                .-------> A09AI
1749            .       DA09AO
                .                  V
                .                  V
1753            .       RA09AW
                .                                 .
1758            .                A99T             .
                .                                 .
1766            .                                 .-------> LA99TD
1765            .              LA99T              .
                .                   V
```



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                .                   V             .
1769            .              RA99T              .
                .                                 .
1774            .                                 .        A09
                .                                 .          .
1781            .       CA09........................        .
                .                                 .
1783            .                A99U             .
                .                                 .
1790       AFR4.........................
                .
1792            .       A99S
                .                                 .
1799            .                A08A             .
                .                   V             .
                .                   V             .
1806            .              RA08A              .
                .                                 .
1811            .                                 .        A99R
                .                                 .          V
                .                                 .          V
1818            .                                 .       RA99R
                .                                 .          .
1823            .                                 .          .        A08
                .                                 .          .          .
1830            .       CA08.................................
                .                                 .
1832       AFR5............
                .
1834            .       A07G.1
                .                                 .
1842            .                .-------> LA07GD
1841            .       LA07G
                .                  V
                .                  V
1845            .       RA07G
                .                                 .
1850            .              A07F.1             .
                .                                 .
1857            .                                 .     A07F.2
                .                                 .        .
1864            .                                 .        .     A07E.8
                .                                 .        .        .
1871            .              CA07F........................
                .                   V             .
                .                   V             .
1873            .              RA07F              .
                .                                 .
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1878   .   .   .   A07E.7
       .   .   .     .
       .   .   .     .
1885   .   .   CA07E7............
       .   .     V
       .   .     V
1887   .   .   RA07E7
       .   .   .
       .   .   .
1892   .   .   .   A07G.2
       .   .   .     V
       .   .   .     V
1899   .   .   .   RA07G2
       .   .   .     .
       .   .   .     .
1904   .   .   .     .     A07E.3
       .   .   .     .       .
       .   .   .     .       .
1911   .   .   .   CA07E3............
       .   .   .     .
       .   .   .     .
1914   .   .   .     .-------> DI7E.3
1913   .   .   .   DI7E.3
       .   .   .     V
       .   .   .     V
1917   .   .   .   RA07E3
       .   .   .     .
       .   .   .     .
1922   .   .   .     .     A07E.2
       .   .   .     .       .
       .   .   .     .       .
1930   .   .   .     .       .-------> DI7E.2
1929   .   .   .     .     DI7E.2
       .   .   .     .       V
       .   .   .     .       V
1933   .   .   .     .     RA07E2
       .   .   .     .       .
       .   .   .     .       .
1938   .   .   .     .       .     A07E.1
       .   .   .     .       .       .
       .   .   .     .       .       .
1946   .   .   .     .       .       .-------> DI7E.1
1945   .   .   .     .       .     DI7E.1
       .   .   .     .       .       V
       .   .   .     .       .       V
1949   .   .   .     .       .     RA07E1
       .   .   .     .       .       .
       .   .   .     .       .       .
1954   .   .   .     .       .       .     A07E.6
       .   .   .     .       .       .       .
       .   .   .     .       .       .       .
1962   .   .   .     .       .       .       .-------> DI7E.6
1961   .   .   .     .       .       .     DI7E.6
       .   .   .     .       .       .       V
       .   .   .     .       .       .       V
1965   .   .   .     .       .       .     RA07E6
       .   .   .     .       .       .       .
       .   .   .     .       .       .       .
1970   .   .   .     .       .       .       .     A07E.5
       .   .   .     .       .       .       .       .
       .   .   .     .       .       .       .       .
1977   .   .   .     .       .       .     CA07E5............
       .   .   .     .       .       .       V
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1979   .   .   .     .       .       .       V
       .   .   .     .       .       .     RA07E5
       .   .   .     .       .       .       .
1984   .   .   .     .       .       .       .     A07E.4
       .   .   .     .       .       .       .       .
       .   .   .     .       .       .       .       .
1991   .   .   .   CA07E4.......................................
       .   .   .     .
       .   .   .     .
1994   .   .   .     .-------> DI7E.4
1993   .   .   .   DI7E.4
       .   .   .     .
       .   .   .     .
1997   .   CA07E.......................
       .     .
       .     .
2000   .     .-------> DIA07E
1999   .   DIA07E
       .     V
       .     V
2003   .   RA07E
       .     .
       .     .
2008   .     .     A07C
       .     .       .
       .     .       .
2015   .   CA07C............
       .     V
       .     V
2017   .   RA07C
       .     .
       .     .
2022   .     .     A07H
       .     .       V
       .     .       V
2029   .     .     RA07H
       .     .       .
       .     .       .
2035   .     .       .<-------   A09AI
2034   .     .     DA09AI
       .     .       V
       .     .       V
2036   .     .     RA09AI
       .     .       .
       .     .       .
2041   .     .       .       A08B
       .     .       .         .
       .     .       .         .
2048   .     .     CA08B............
       .     .       V
       .     .       V
2050   .     .     RA08B
       .     .       .
       .     .       .
2055   .     .       .       A07D
       .     .       .         .
       .     .       .         .
2062   .   CA07D.................................
       .     V
       .     V
2064   .   RA07D
       .     .
       .     .
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2069          .          .       S30D
              .          .         V
              .          .         V
2076          .          .      RS30D
              .          .         .
              .          .         .
2081          .          .         .        S30C
              .          .         .          .
              .          .         .          .
2089          .          .         .          .          .<-------   A09FI
2088          .          .         .          .     DA09FI
              .          .         .          .          V
              .          .         .          .          V
2090          .          .         .          .     RA09FI
              .          .         .          .          .
              .          .         .          .          .
2095          .          .        XX1.........................
              .          .         .
              .          .         .
2097          .          .         .        S30B
              .          .         .          .
              .          .         .          .
2104          .          .      CS30B............
              .          .         .
              .          .         .
2107          .          .         .-------> DS30BI
2106          .          .     DS30BO
              .          .         V
              .          .         V
2110          .          .     RS30BW
              .          .         .
              .          .         .
2115          .          .         .        S30A
              .          .         .          .
              .          .         .          .
2122          .          .      CS30A............
              .          .         .
              .          .         .
2125          .          .         .-------> DS30AI
2124          .          .     DS30AO
              .          .         V
              .          .         V
2128          .          .     RS30AW
              .          .         .
              .          .         .
2133          .          .         .         S30
              .          .         .          .
              .          .         .          .
2143          .          .       CS30............
              .          .         V
              .          .         V
2145          .          .       RS30
              .          .         .
              .          .         .
2150          .          .         .        A07B
              .          .         .          .
              .          .         .          .
2161          .          .         .          .-------> LA07BD
2160          .          .         .       LA07B
              .          .         .          .
              .          .         .          .
2164          .       CA07B........................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION


```
1****************************************                                                    *
****************************************                                                    *
 *                                      *                                                    *
 *                                      *                                                    *   U.S. ARMY CORPS OF ENGINEERS
 *  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                    *   HYDROLOGIC ENGINEERING
 *                                      *                                                    *
 *              JUN   1998              *                                                    *        609 SECOND STREET
CENTER    *                                                                                  *
 *            VERSION 4.1               *                                                    *      DAVIS, CALIFORNIA 95616
 *                                      *                                                    *
 *                                      *                                                    *          (916) 756-1104
 *  RUN DATE   02JUN10  TIME  13:42:46  *                                                    *
 *                                      *                                                    *
 ****************************************
****************************************
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Project ID: 107 & Union Hills - Major Basin: 01 - Return Period: 100 Years
                                                                          **
107th Avenue and Union Hills Drive Design Concept Report                  **
                                                                          **

PROJECT NO.: FCD 2009C036                    G&M: 10388A                  **
                                                                          **

Original HEC-1 Model: EC068ASE.DAT, Wood/Patel, SZ, May 2007              **
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
Modified HEC-1 Model: DCR100-6.DAT, Goodwin & Marshall, Inc., May 29, 2010**
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
                                                                          **

1) NOAA2 Rainfall Data                                                    **

2) DDMSW V3.5.7 Used                                                      **

                                                                          **

*****************************************************************************
Project ID: GP_NW ADMP_EX1 - Major Basin: 01 - Return Period: 100 Years
                                                                          **
Glendale/Peoria ADMP Northwest Region Update                              **
Original HEC-1 Model: L3R5DVR.DAT, Wood/Patel, APRIL 14, 2006             **
                      REVISED FOR DOVE VALLEY RANCH IMPROVEMENTS          **
Modified HEC-1 Model: EC068ASE.DAT, Wood/Patel, SZ, May 2007              **
                      100-Year 6-Hour HEC-1 Model for Existing Conditions **
1) NOAA 2 Rainfall Data                                                   **
2) DDMSW MCUHP1 V3.3.2 Used                                               **
                                                                          **
*****************************************************************************
*****************************************************************************
**                                                                         **
** CONCEPT REFINEMENT STUDY FOR ROSE GARDEN LANE DRAINAGE IMPROVEMENTS     **
** ORIGINAL HEC-1 FILE FROM GLENDAL/PEORIA ADMP UPDATE STUDY               **
** MODIFIED HEC-1 MODEL: LEVEL3R5.DAT, Wood/Patel & CVL, May 2005          **
** THIS IS THE PREFERRED ALTERNATIVE MODEL                                 **
** WPA REVISED APRIL 14, 2006 FOR DOVE VALLEY RANCH IMPROVEMENTS           **
** USING LATEST SURVEY DATA.                                               **
*****************************************************************************
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**********************************************************************
**                                                                  **
**                    Glendale/Peoria ADMP Update                   **
**                                                                  **
**********************************************************************
**********************************************************************
PROJECT:                Glendale Peoria ADMP Update
CLIENT:                 Flood Control District of Maricopa County
PREPARED BY:            Entellus, Inc.
PROJECT No:             FCD 99-44                Entellus 310.017
FILE NAME: LEVEL3.DAT                  CREATED DATE: JUNE 6, 2001
STORM:                  100-year 6-hour Storm
DEVELOPMENT CONDITIONS: LEVEL 3 HYDROLOGY

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

   IT        HYDROGRAPH TIME DATA
                 NMIN          2  MINUTES IN COMPUTATION INTERVAL
                IDATE      1   0  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       1000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      2   0  ENDING DATE
              NDTIME       0918  ENDING TIME
               ICENT         19  CENTURY MARK

           COMPUTATION INTERVAL     .03 HOURS
               TOTAL TIME BASE   33.30 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

53 JD        INDEX STORM NO. 1
                STRM        3.20  PRECIPITATION DEPTH
                TRDA         .01  TRANSPOSITION DRAINAGE AREA

54 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       .01       .01       .01
                .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                .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
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57 JD        INDEX STORM NO. 2
                STRM        3.18  PRECIPITATION DEPTH
                TRDA         .50  TRANSPOSITION DRAINAGE AREA

58 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       .01       .01       .01
                .01       .01       .01       .01       .01       .02       .02       .02       .02       .02
                .02       .02       .04       .06       .06       .06       .06       .06       .06       .06
                .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

61 JD        INDEX STORM NO. 3
                STRM        3.12  PRECIPITATION DEPTH
                TRDA        2.80  TRANSPOSITION DRAINAGE AREA

62 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
                .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .03       .03       .03       .03       .03
                .03       .03       .03       .03       .03       .03       .03       .03       .03       .03
                .02       .02       .02       .02       .02       .02       .02       .01       .01       .01
                .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

65 JD        INDEX STORM NO. 4
                STRM        2.95  PRECIPITATION DEPTH
                TRDA       16.00  TRANSPOSITION DRAINAGE AREA

66 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
                .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
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                    .01      .01      .01      .01      .01      .02      .02      .02      .02      .02
                    .02      .02      .02      .03      .03      .03      .03      .03      .03      .03
                    .02      .02      .02      .02      .02      .02      .02      .01      .01      .01
                    .01      .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
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                    .00      .00      .00      .00      .00      .00      .00      .00      .00      .00

 69 JD        INDEX STORM NO. 5
                     STRM        2.60  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 70 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
                    .01      .01      .01      .01      .01      .01      .01      .01      .01      .01
                    .01      .01      .01      .01      .01      .02      .02      .02      .02      .02
                    .02      .02      .02      .02      .02      .02      .02      .02      .02      .02
                    .02      .02      .02      .02      .02      .02      .02      .01      .01      .01
                    .01      .01      .01      .01      .01      .01      .01      .01      .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
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            *            *
 2164 KK    *     CA07B  *
            *            *
            **************

 2165 KO        OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                      IOUT         21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       1000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .033  TIME INTERVAL IN HOURS

1
                                                  RUNOFF SUMMARY
                                         FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
          OPERATION       STATION     FLOW    PEAK                                          AREA      STAGE     MAX STAGE
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+                                                      6-HOUR    24-HOUR    72-HOUR
          HYDROGRAPH AT
+                          CBA       16.   4.10        1.         0.         0.        .01
          ROUTED TO
+                         RCBA       16.   4.20        1.         0.         0.        .01
          HYDROGRAPH AT
+                          P28       56.   4.13        7.         2.         1.        .03
          2 COMBINED AT
+                         CP28       70.   4.13        9.         2.         2.        .03
          DIVERSION TO
+                         DB28       55.   4.03        2.         1.         0.        .03
          HYDROGRAPH AT
+                         DT28       70.   4.13        6.         2.         1.        .03
          HYDROGRAPH AT
+                          CBB       40.   4.07        3.         1.         1.        .02
          ROUTED TO
+                         RCBB       40.   4.10        3.         1.         1.        .02
          2 COMBINED AT
+                        CP28a      110.   4.13        9.         2.         2.        .05
          ROUTED TO
+                         R28a       93.   4.30        9.         2.         2.        .05
          HYDROGRAPH AT
+                          P27      107.   4.17       17.         4.         3.        .06
          DIVERSION TO
+                         DB27       54.   3.93        3.         1.         0.        .06
          HYDROGRAPH AT
+                         DT27      107.   4.17       14.         3.         3.        .06
          2 COMBINED AT
+                         CP27      191.   4.27       23.         6.         4.        .12
          HYDROGRAPH AT
+                         P27A       16.   4.07        2.         0.         0.        .01
          DIVERSION TO
+                        DB27a        9.   3.90        0.         0.         0.        .01
          HYDROGRAPH AT
+                        DT27a       16.   4.07        1.         0.         0.        .01
          HYDROGRAPH AT
+                         P27B       24.   4.10        3.         1.         1.        .01
          DIVERSION TO
+                        DB27b       10.   3.87        1.         0.         0.        .01
          HYDROGRAPH AT
+                        DT27b       24.   4.10        3.         1.         0.        .01
          HYDROGRAPH AT
+                          CBL       54.   4.10        6.         2.         1.        .03
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+	4 COMBINED AT	CCBL	260.	4.23	33.	8.	6.	.16
+	ROUTED TO	RCBL	260.	4.30	33.	8.	6.	.16
+	HYDROGRAPH AT	CBK	108.	4.17	9.	2.	2.	.05
+	2 COMBINED AT	CCBK	344.	4.23	41.	10.	7.	.22
+	ROUTED TO	RCBK	341.	4.27	41.	10.	7.	.22
+	HYDROGRAPH AT	P14	16.	4.10	1.	0.	0.	.01
+	DIVERSION TO	RB14	16.	4.10	1.	0.	0.	.01
+	HYDROGRAPH AT	RT14	0.	.00	0.	0.	0.	.01
+	2 COMBINED AT	CP14	341.	4.27	41.	10.	7.	.22
+	HYDROGRAPH AT	P15	5.	4.30	1.	0.	0.	.01
+	DIVERSION TO	DB15	5.	4.30	1.	0.	0.	.01
+	HYDROGRAPH AT	DT15	2.	4.80	0.	0.	0.	.01
+	HYDROGRAPH AT	CBJ	29.	4.13	2.	1.	0.	.01
+	3 COMBINED AT	CP15	363.	4.23	44.	11.	8.	.25
+	ROUTED TO	R15	362.	4.27	44.	11.	8.	.25
+	HYDROGRAPH AT	CBH	34.	4.07	2.	1.	0.	.01
+	ROUTED TO	RCBH	30.	4.13	2.	1.	0.	.01
+	HYDROGRAPH AT	P25S	36.	4.20	5.	1.	1.	.03
+	2 COMBINED AT	CP25S	64.	4.13	7.	2.	1.	.04
+	2 COMBINED AT	AFR0	415.	4.23	51.	13.	9.	.29
+	HYDROGRAPH AT	E1	32.	4.07	2.	0.	0.	.01

+	ROUTED TO	RE1	32.	4.13	2.	0.	0.	.01
+	HYDROGRAPH AT	E2	28.	4.10	3.	1.	0.	.02
+	ROUTED TO	RE2	28.	4.13	3.	1.	0.	.02
+	HYDROGRAPH AT	P13	125.	4.10	11.	3.	2.	.06
+	DIVERSION TO	DB13	43.	3.87	2.	1.	0.	.06
+	HYDROGRAPH AT	DT13	125.	4.10	9.	2.	2.	.06
+	3 COMBINED AT	CP13	182.	4.10	14.	3.	2.	.09
+	ROUTED TO	R13	178.	4.17	14.	3.	2.	.09
+	HYDROGRAPH AT	P12	69.	4.17	8.	2.	2.	.04
+	DIVERSION TO	DB12	53.	4.03	2.	1.	0.	.04
+	HYDROGRAPH AT	DT12	69.	4.17	6.	2.	1.	.04
+	2 COMBINED AT	CP12	246.	4.17	20.	5.	4.	.13
+	HYDROGRAPH AT	E3	74.	4.40	12.	3.	2.	.08
+	ROUTED TO	RE3	74.	4.43	12.	3.	2.	.08
+	HYDROGRAPH AT	P10	98.	4.13	11.	3.	2.	.05
+	DIVERSION TO	DB10	46.	3.93	2.	1.	0.	.05
+	HYDROGRAPH AT	DT10	98.	4.13	9.	2.	2.	.05
+	2 COMBINED AT	CP10	142.	4.20	21.	5.	4.	.14
+	ROUTED TO	R10	141.	4.33	21.	5.	4.	.14
+	HYDROGRAPH AT	P11	39.	4.30	8.	2.	2.	.04
+	DIVERSION TO	DB11	39.	4.27	2.	1.	0.	.04
	HYDROGRAPH AT							

+		DT11	39.	4.33	6.	1.	1.	.04
+	2 COMBINED AT	CP11	180.	4.33	27.	7.	5.	.18
+	HYDROGRAPH AT	E4	33.	4.37	6.	1.	1.	.04
+	ROUTED TO	RE4	33.	4.40	6.	1.	1.	.04
+	HYDROGRAPH AT	P9	82.	4.10	9.	2.	2.	.05
+	DIVERSION TO	DB9	45.	3.93	2.	0.	0.	.05
+	HYDROGRAPH AT	DT9	82.	4.10	7.	2.	1.	.05
+	HYDROGRAPH AT	HV1	6.	4.30	1.	0.	0.	.01
+	3 COMBINED AT	CP9	104.	4.13	14.	4.	3.	.09
+	ROUTED TO	R9	104.	4.17	14.	4.	3.	.09
+	HYDROGRAPH AT	P8	14.	4.23	3.	1.	0.	.01
+	DIVERSION TO	DB8	12.	4.10	1.	0.	0.	.01
+	HYDROGRAPH AT	DT8	14.	4.23	2.	1.	0.	.01
+	HYDROGRAPH AT	P7	17.	4.20	3.	1.	1.	.01
+	DIVERSION TO	DB7	13.	4.07	1.	0.	0.	.01
+	HYDROGRAPH AT	DT7	17.	4.20	2.	1.	0.	.01
+	3 COMBINED AT	CP7	135.	4.17	18.	5.	3.	.12
+	ROUTED TO	R7	134.	4.20	18.	5.	3.	.12
+	HYDROGRAPH AT	P6	46.	4.50	14.	4.	3.	.07
+	DIVERSION TO	DB6	45.	4.40	4.	1.	1.	.07
+	HYDROGRAPH AT	DT6	46.	4.50	11.	3.	2.	.07
+	2 COMBINED AT	CP6	145.	4.47	29.	7.	5.	.19

+	3 COMBINED AT	HPVLY	498.	4.20	75.	19.	14.	.50
+	HYDROGRAPH AT	A11MA	207.	4.07	17.	4.	3.	.07
+	DIVERSION TO	DA11MA	182.	4.00	7.	2.	1.	.07
+	HYDROGRAPH AT	A11MAQ	207.	4.07	10.	2.	2.	.07
+	ROUTED TO	SA11MA	30.	4.47	10.	2.	2.	.07
+	ROUTED TO	RA11MA	30.	4.70	10.	2.	2.	.07
+	HYDROGRAPH AT	A11MB	494.	4.10	51.	13.	9.	.19
+	DIVERSION TO	DA11MB	142.	3.77	7.	2.	1.	.19
+	HYDROGRAPH AT	A11MBQ	494.	4.10	43.	11.	8.	.19
+	ROUTED TO	SA11MB	267.	4.33	41.	11.	8.	.19
+	HYDROGRAPH AT	A11NA	198.	4.07	16.	4.	3.	.08
+	ROUTED TO	SA11NA	32.	4.47	16.	4.	3.	.08
+	ROUTED TO	RA11NA	32.	4.70	16.	4.	3.	.08
+	3 COMBINED AT	CA11MB	308.	4.37	66.	17.	12.	.34
+	ROUTED TO	RA11MB	279.	4.60	66.	17.	12.	.34
+	HYDROGRAPH AT	A11O	116.	4.13	12.	3.	2.	.06
+	ROUTED TO	SA11O	35.	4.53	12.	3.	2.	.06
+	ROUTED TO	RA11O	35.	4.83	12.	3.	2.	.06
+	HYDROGRAPH AT	A11KB	227.	4.13	23.	6.	4.	.11
+	ROUTED TO	SA11KB	32.	4.67	21.	6.	4.	.11
+	HYDROGRAPH AT	A11KA	191.	4.07	19.	5.	3.	.08

+	ROUTED TO	SA11KA	31.	4.57	18.	5.	3.	.08
+	ROUTED TO	RA11KA	31.	4.80	18.	5.	3.	.08
+	3 COMBINED AT	CA11KB	98.	4.80	51.	14.	10.	.24
+	ROUTED TO	RA11KB	98.	5.03	51.	14.	10.	.24
+	HYDROGRAPH AT	A11G	90.	4.23	12.	3.	2.	.06
+	ROUTED TO	RA11GN	86.	4.43	12.	3.	2.	.06
+	HYDROGRAPH AT	A11KC	276.	4.13	26.	7.	5.	.13
+	ROUTED TO	SA11KC	82.	4.47	25.	7.	5.	.13
+	3 COMBINED AT	CA11KC	240.	4.50	87.	23.	17.	.44
+	ROUTED TO	RA11KC	237.	4.60	87.	23.	17.	.44
+	HYDROGRAPH AT	A11J	157.	4.37	25.	6.	5.	.11
+	ROUTED TO	SA11J	88.	4.77	25.	6.	5.	.11
+	3 COMBINED AT	CA11J	515.	4.67	170.	45.	33.	.89
+	HYDROGRAPH AT	A11L	382.	4.30	72.	18.	13.	.26
+	DIVERSION TO	DA11L	285.	4.10	15.	4.	3.	.26
+	HYDROGRAPH AT	DA11LQ	382.	4.30	57.	14.	10.	.26
+	ROUTED TO	RA11L	375.	4.50	57.	14.	10.	.26
+	HYDROGRAPH AT	A11I	298.	4.20	43.	11.	8.	.15
+	DIVERSION TO	DA11I	298.	4.20	24.	6.	4.	.15
+	HYDROGRAPH AT	DA11IQ	249.	4.37	19.	5.	3.	.15
+	3 COMBINED AT	CA11I	919.	4.63	241.	63.	45.	1.31
	ROUTED TO							

+		RA11I	898.	4.83	240.	63.	45.	1.31
+	HYDROGRAPH AT	A11EA	143.	4.40	24.	6.	4.	.14
+	ROUTED TO	RA11EA	141.	4.53	24.	6.	4.	.14
+	HYDROGRAPH AT	A11EB	126.	4.60	29.	7.	5.	.19
+	3 COMBINED AT	CA11EB	1040.	4.83	281.	73.	53.	1.64
+	HYDROGRAPH AT	41	126.	4.13	10.	3.	2.	.05
+	ROUTED TO	B41	96.	4.23	10.	3.	2.	.05
+	HYDROGRAPH AT	42	180.	4.13	17.	4.	3.	.08
+	ROUTED TO	B42	136.	4.23	17.	4.	3.	.08
+	2 COMBINED AT	C41	232.	4.23	27.	7.	5.	.13
+	ROUTED TO	RC41	212.	4.63	27.	7.	5.	.13
+	HYDROGRAPH AT	A11F	368.	4.40	54.	14.	10.	.33
+	2 COMBINED AT	CA11F	517.	4.53	81.	20.	15.	.46
+	2 COMBINED AT	CA11E	1279.	4.80	343.	89.	64.	2.11
+	ROUTED TO	RA11E	1270.	4.90	342.	89.	64.	2.11
+	HYDROGRAPH AT	A09U	324.	4.17	33.	8.	6.	.17
+	DIVERSION TO	A09UI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09U	324.	4.17	33.	8.	6.	.17
+	ROUTED TO	RA09UW	238.	4.67	33.	8.	6.	.17
+	HYDROGRAPH AT	A09T	210.	4.33	27.	7.	5.	.18
+	2 COMBINED AT	CA09T	383.	4.43	60.	15.	11.	.36
+	DIVERSION TO	A09TI	0.	.00	0.	0.	0.	.36

+	HYDROGRAPH AT	DA09T	383.	4.43	60.	15.	11.	.36
+	ROUTED TO	RA09TW	360.	4.70	60.	15.	11.	.36
+	HYDROGRAPH AT	A11A	452.	4.33	69.	17.	13.	.30
+	DIVERSION TO	DA11A	315.	4.10	16.	4.	3.	.30
+	HYDROGRAPH AT	DA11AQ	452.	4.33	54.	14.	10.	.30
+	3 COMBINED AT	CX23	1591.	4.83	430.	112.	81.	2.76
+	ROUTED TO	RX23	1562.	5.03	429.	112.	81.	2.76
+	HYDROGRAPH AT	S1	124.	4.40	21.	5.	4.	.12
+	HYDROGRAPH AT	P2	111.	4.10	11.	3.	2.	.05
+	DIVERSION TO	RB2	111.	4.10	10.	2.	2.	.05
+	HYDROGRAPH AT	RT2	18.	4.57	1.	0.	0.	.05
+	3 COMBINED AT	CS1	1585.	5.03	441.	115.	83.	2.93
+	ROUTED TO	RS1	1584.	5.03	441.	115.	83.	2.93
+	HYDROGRAPH AT	S2	31.	4.07	2.	0.	0.	.01
+	HYDROGRAPH AT	S3	18.	4.03	1.	0.	0.	.01
+	3 COMBINED AT	CS2	1583.	5.03	442.	116.	83.	2.95
+	ROUTED TO	RS2	1583.	5.07	442.	116.	83.	2.95
+	HYDROGRAPH AT	P3	85.	4.17	11.	3.	2.	.05
+	DIVERSION TO	RB3	85.	4.17	11.	3.	2.	.05
+	HYDROGRAPH AT	RT3	9.	5.17	1.	0.	0.	.05
+	2 COMBINED AT	CP3	1583.	5.07	442.	116.	83.	3.01

+	HYDROGRAPH AT	P4b	45.	4.07	4.	1.	1.	.02
+	DIVERSION TO	RB4b	12.	3.80	1.	0.	0.	.02
+	HYDROGRAPH AT	RT4b	45.	4.07	3.	1.	1.	.02
+	HYDROGRAPH AT	S4	16.	4.23	2.	1.	0.	.01
+	HYDROGRAPH AT	P1	42.	4.20	5.	1.	1.	.03
+	DIVERSION TO	DB1	33.	4.07	1.	0.	0.	.03
+	HYDROGRAPH AT	DT1	42.	4.20	4.	1.	1.	.03
+	2 COMBINED AT	CP1	57.	4.20	6.	2.	1.	.04
+	HYDROGRAPH AT	HV2	7.	5.20	5.	1.	1.	.03
+	ROUTED TO	RHV2	7.	5.27	5.	1.	1.	.03
+	DIVERSION TO	DBHV2	7.	5.27	1.	0.	0.	.03
+	HYDROGRAPH AT	DTHV2	7.	5.50	4.	1.	1.	.03
+	HYDROGRAPH AT	P4a	51.	4.20	8.	2.	1.	.04
+	DIVERSION TO	DB4a	30.	4.00	1.	0.	0.	.04
+	HYDROGRAPH AT	DT4a	51.	4.20	6.	2.	1.	.04
+	5 COMBINED AT	SOUTH	1588.	5.07	454.	119.	86.	3.14
+	HYDROGRAPH AT	N11O	78.	4.30	8.	2.	1.	.05
+	DIVERSION TO	N11OI	70.	4.30	7.	2.	1.	.05
+	HYDROGRAPH AT	DN11O	8.	4.30	1.	0.	0.	.05
+	ROUTED TO	RN11OW	5.	5.20	1.	0.	0.	.05
+	HYDROGRAPH AT	DRA09T	0.	.00	0.	0.	0.	.36
	ROUTED TO							

+		RA09TS	0.	.00	0.	0.	0.	.36
+	HYDROGRAPH AT	A09R	104.	4.57	20.	5.	4.	.14
+	3 COMBINED AT	CA09R	104.	4.57	21.	5.	4.	.20
+	DIVERSION TO	A09RI	104.	4.57	21.	5.	4.	.20
+	HYDROGRAPH AT	DA09R	1.	5.20	0.	0.	0.	.20
+	ROUTED TO	RA09RW	1.	7.07	0.	0.	0.	.20
+	HYDROGRAPH AT	A09S	116.	4.20	21.	5.	4.	.07
+	DIVERSION TO	DA09S	116.	4.20	14.	4.	3.	.07
+	HYDROGRAPH AT	DA09SQ	69.	4.60	7.	2.	1.	.07
+	2 COMBINED AT	CA09S	69.	4.60	7.	2.	1.	.27
+	ROUTED TO	RA09SW	61.	4.77	7.	2.	1.	.27
+	HYDROGRAPH AT	A09QA	112.	4.30	13.	3.	2.	.09
+	2 COMBINED AT	CA09QA	111.	4.30	20.	5.	4.	.36
+	DIVERSION TO	A09QAI	111.	4.30	19.	5.	4.	.36
+	HYDROGRAPH AT	DA09QA	1.	5.97	0.	0.	0.	.36
+	ROUTED TO	RA09QW	1.	6.10	0.	0.	0.	.36
+	HYDROGRAPH AT	A99YA	157.	4.23	16.	4.	3.	.10
+	2 COMBINED AT	CA99YA	157.	4.23	17.	4.	3.	.46
+	ROUTED TO	RA99YA	152.	4.30	17.	4.	3.	.46
+	HYDROGRAPH AT	A99YB	205.	4.30	23.	6.	4.	.17
+	3 COMBINED AT	CA99YB	1585.	5.07	473.	124.	89.	3.77
+	3 COMBINED AT	AFR1	1744.	5.03	558.	146.	105.	4.56

+	HYDROGRAPH AT	BA09UI	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09US	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	N11NB	159.	4.37	24.	6.	4.	.14
+	2 COMBINED AT	CN11NB	159.	4.37	24.	6.	4.	.14
+	ROUTED TO	RN11NW	148.	4.77	24.	6.	4.	.14
+	HYDROGRAPH AT	BN11OI	70.	4.30	7.	2.	1.	.05
+	ROUTED TO	RN11OS	57.	4.73	7.	2.	1.	.05
+	HYDROGRAPH AT	N11M	137.	4.27	14.	3.	2.	.10
+	3 COMBINED AT	CN11M	235.	4.73	45.	11.	8.	.24
+	DIVERSION TO	N11MI	59.	4.73	11.	3.	2.	.24
+	HYDROGRAPH AT	DN11M	176.	4.73	34.	8.	6.	.24
+	ROUTED TO	RN11MS	164.	4.97	34.	8.	6.	.24
+	HYDROGRAPH AT	N11J	214.	4.37	41.	10.	7.	.24
+	DIVERSION TO	LN11JD	80.	4.03	4.	1.	1.	.24
+	HYDROGRAPH AT	LN11J	214.	4.37	38.	9.	7.	.24
+	2 COMBINED AT	CN11J	299.	4.50	71.	18.	13.	.48
+	DIVERSION TO	N11JI	299.	4.50	71.	18.	13.	.48
+	HYDROGRAPH AT	DN11J	0.	.00	0.	0.	0.	.48
+	ROUTED TO	RN11JW	0.	.00	0.	0.	0.	.48
+	HYDROGRAPH AT	DRN11M	59.	4.73	11.	3.	2.	.24
+	ROUTED TO	RN11MW	52.	5.27	11.	3.	2.	.24

+	2 COMBINED AT	CX4	52.	5.27	11.	3.	2.	.48
+	ROUTED TO	RX4	50.	5.50	11.	3.	2.	.48
+	HYDROGRAPH AT	A09O	119.	4.70	31.	8.	6.	.19
+	ROUTED TO	SA09O	45.	5.73	28.	8.	6.	.19
+	HYDROGRAPH AT	BA09RI	104.	4.57	21.	5.	4.	.20
+	ROUTED TO	RA09RS	100.	4.90	21.	5.	4.	.20
+	3 COMBINED AT	CA09O	152.	5.30	57.	15.	11.	.68
+	DIVERSION TO	A09OI	152.	5.30	57.	15.	11.	.68
+	HYDROGRAPH AT	DA09O	0.	.00	0.	0.	0.	.68
+	ROUTED TO	RA09OW	0.	.00	0.	0.	0.	.68
+	HYDROGRAPH AT	A09P	184.	4.47	31.	8.	6.	.19
+	ROUTED TO	SA09P	54.	5.23	30.	8.	6.	.19
+	2 COMBINED AT	CA09P	52.	5.23	28.	7.	5.	.87
+	ROUTED TO	RA09P	52.	5.27	28.	7.	5.	.87
+	HYDROGRAPH AT	BA09QA	111.	4.30	19.	5.	4.	.36
+	ROUTED TO	RA09QB	104.	4.53	19.	5.	4.	.36
+	HYDROGRAPH AT	A09QB	163.	4.27	23.	6.	4.	.14
+	3 COMBINED AT	CA09Q	234.	4.50	66.	17.	12.	1.01
+	DIVERSION TO	A09QI	234.	4.50	66.	17.	12.	1.01
+	HYDROGRAPH AT	DA09Q	0.	.00	0.	0.	0.	1.01
+	ROUTED TO	RA09QW	0.	.00	0.	0.	0.	1.01
	HYDROGRAPH AT							

+		A10A	266.	4.30	32.	8.	6.	.19
+	2 COMBINED AT	CA10A	219.	4.30	29.	7.	5.	1.20
+	ROUTED TO	RA10A	217.	4.37	29.	7.	5.	1.20
+	HYDROGRAPH AT	A99X	507.	4.20	57.	14.	10.	.26
+	2 COMBINED AT	CA99X	562.	4.23	82.	21.	15.	1.46
+	2 COMBINED AT	AFR2	1760.	5.03	604.	159.	115.	6.02
+	HYDROGRAPH AT	BA09OI	152.	5.30	57.	15.	11.	.68
+	ROUTED TO	RA09OS	150.	5.57	57.	15.	11.	.68
+	HYDROGRAPH AT	A09K	382.	4.57	60.	15.	11.	.41
+	DIVERSION TO	A09KI	279.	4.57	44.	11.	8.	.41
+	HYDROGRAPH AT	DA09K	103.	4.57	16.	4.	3.	.41
+	2 COMBINED AT	CX7	183.	5.40	75.	20.	14.	.41
+	ROUTED TO	RX7S	183.	5.53	74.	20.	14.	.41
+	HYDROGRAPH AT	N11NA	60.	4.07	4.	1.	1.	.02
+	ROUTED TO	RN11NA	46.	4.43	4.	1.	1.	.02
+	HYDROGRAPH AT	N11NC	250.	4.23	27.	7.	5.	.17
+	2 COMBINED AT	CN11NC	265.	4.27	31.	8.	6.	.19
+	DIVERSION TO	N11NP	149.	4.03	24.	6.	4.	.19
+	HYDROGRAPH AT	DN11NC	116.	4.27	7.	2.	1.	.19
+	ROUTED TO	RN11NC	111.	4.37	7.	2.	1.	.19
+	HYDROGRAPH AT	N11ND	62.	4.23	10.	2.	2.	.05
+	HYDROGRAPH AT	N11K	152.	4.33	28.	7.	5.	.17

+	3 COMBINED AT	CN11K	318.	4.37	44.	11.	8.	.41
+	DIVERSION TO	N11KP	55.	3.97	19.	5.	4.	.41
+	HYDROGRAPH AT	DN11KS	263.	4.37	24.	6.	4.	.41
+	ROUTED TO	RN11K	246.	4.63	24.	6.	4.	.41
+	DIVERSION TO	X5I	122.	4.63	7.	2.	1.	.41
+	HYDROGRAPH AT	DX5	124.	4.63	17.	4.	3.	.41
+	ROUTED TO	RX5W	118.	4.93	17.	4.	3.	.41
+	HYDROGRAPH AT	N11H	410.	4.57	61.	15.	11.	.42
+	2 COMBINED AT	CN11H	364.	4.57	72.	18.	13.	.83
+	ROUTED TO	RN11H	351.	4.80	72.	18.	13.	.83
+	HYDROGRAPH AT	BN11JI	299.	4.50	71.	18.	13.	.48
+	ROUTED TO	RN11JS	289.	4.93	71.	18.	13.	.48
+	HYDROGRAPH AT	N11G	526.	4.57	73.	18.	13.	.52
+	3 COMBINED AT	CN11G	855.	4.80	191.	48.	34.	1.36
+	ROUTED TO	RN11G	844.	4.90	191.	48.	34.	1.36
+	HYDROGRAPH AT	N11DA	295.	4.30	54.	14.	10.	.26
+	DIVERSION TO	LDAOUT	277.	4.23	16.	4.	3.	.26
+	HYDROGRAPH AT	LN11DA	295.	4.30	38.	10.	7.	.26
+	ROUTED TO	SN11DA	121.	5.00	38.	10.	7.	.26
+	DIVERSION TO	D11DAS	21.	5.00	8.	2.	1.	.26
+	HYDROGRAPH AT	N11DAW	100.	5.00	30.	8.	5.	.26

+	ROUTED TO	RN11DA	100.	5.20	30.	8.	5.	.26
+	HYDROGRAPH AT	N11FB	114.	4.33	25.	6.	5.	.12
+	DIVERSION TO	LN1FBD	114.	4.33	21.	5.	4.	.12
+	HYDROGRAPH AT	LN11FB	29.	5.57	4.	1.	1.	.12
+	2 COMBINED AT	CN11FB	124.	5.57	34.	8.	6.	.38
+	2 COMBINED AT	C98RGL	881.	4.93	210.	53.	38.	1.73
+	ROUTED TO	RN11FB	875.	4.97	210.	53.	38.	1.73
+	HYDROGRAPH AT	DRA09K	279.	4.57	44.	11.	8.	.41
+	ROUTED TO	RA09KS	271.	4.73	44.	11.	8.	.41
+	HYDROGRAPH AT	N11FA	194.	4.30	38.	10.	7.	.18
+	DIVERSION TO	LN1FAD	194.	4.30	16.	4.	3.	.18
+	HYDROGRAPH AT	LN11FA	185.	4.43	23.	6.	4.	.18
+	HYDROGRAPH AT	A09GA	200.	4.07	22.	6.	4.	.07
+	DIVERSION TO	L09GAD	198.	4.07	12.	3.	2.	.07
+	HYDROGRAPH AT	LA09GA	193.	4.10	10.	3.	2.	.07
+	4 COMBINED AT	CN11FA	1124.	4.93	269.	67.	49.	1.99
+	ROUTED TO	RN11FA	1120.	4.97	269.	67.	49.	1.99
+	HYDROGRAPH AT	A09GB	27.	4.67	10.	3.	2.	.05
+	DIVERSION TO	L09GBD	27.	4.67	6.	1.	1.	.05
+	HYDROGRAPH AT	LA09GB	20.	5.40	5.	1.	1.	.05
+	2 COMBINED AT	CA09G	1116.	4.97	272.	68.	49.	2.04
	DIVERSION TO							

+		A09GI	150.	4.73	48.	12.	9.	2.04
+	HYDROGRAPH AT	DA09G	964.	4.97	224.	56.	40.	2.04
+	ROUTED TO	RA09GW	956.	5.03	224.	56.	40.	2.04
+	2 COMBINED AT	CX8	990.	5.07	274.	70.	50.	2.45
+	ROUTED TO	RX8W	981.	5.17	273.	70.	50.	2.45
+	HYDROGRAPH AT	A09H	199.	4.43	50.	13.	9.	.24
+	DIVERSION TO	LA09HD	199.	4.43	25.	6.	5.	.24
+	HYDROGRAPH AT	LA09H	166.	4.80	25.	6.	5.	.24
+	2 COMBINED AT	CA09H1	1058.	5.17	287.	73.	53.	2.69
+	HYDROGRAPH AT	A09J	166.	4.33	34.	9.	6.	.17
+	DIVERSION TO	LA09JD	166.	4.33	16.	4.	3.	.17
+	HYDROGRAPH AT	LA09J	151.	4.53	19.	5.	3.	.17
+	DIVERSION TO	A09JI	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DA09J	151.	4.53	19.	5.	3.	.17
+	ROUTED TO	RA09JS	130.	4.87	19.	5.	3.	.17
+	2 COMBINED AT	CA09H	1122.	5.13	298.	76.	55.	2.85
+	ROUTED TO	RA09H	1120.	5.17	298.	76.	55.	2.85
+	HYDROGRAPH AT	BA09QI	234.	4.50	66.	17.	12.	1.01
+	ROUTED TO	RA09QS	230.	4.63	66.	17.	12.	1.01
+	HYDROGRAPH AT	A09M	251.	4.47	47.	12.	9.	.25
+	DIVERSION TO	LA09MD	230.	4.33	14.	3.	3.	.25
+	HYDROGRAPH AT	LA09M	251.	4.47	34.	8.	6.	.25

+	2 COMBINED AT	CA09M	500.	4.57	106.	27.	19.	.25
+	ROUTED TO	RA09M	497.	4.60	106.	27.	19.	.25
+	HYDROGRAPH AT	A09N	138.	4.27	24.	6.	4.	.11
+	2 COMBINED AT	CA09N	598.	4.57	128.	33.	24.	.36
+	ROUTED TO	LA09N	415.	4.93	123.	33.	24.	.36
+	ROUTED TO	RA09N	414.	5.03	123.	33.	24.	.36
+	HYDROGRAPH AT	DRA09J	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RA09JW	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	A09L	142.	4.33	29.	7.	5.	.14
+	3 COMBINED AT	CA09L	480.	5.03	149.	40.	29.	.50
+	ROUTED TO	LA09L	478.	5.07	148.	40.	29.	.50
+	ROUTED TO	RA09LS	475.	5.10	148.	40.	29.	.50
+	HYDROGRAPH AT	A09IH	103.	4.27	19.	5.	3.	.09
+	2 COMBINED AT	CA09IH	490.	5.10	162.	44.	32.	.59
+	ROUTED TO	LA09IH	468.	5.20	159.	44.	32.	.59
+	HYDROGRAPH AT	A09I	134.	4.37	30.	8.	5.	.13
+	DIVERSION TO	LA09ID	134.	4.37	11.	3.	2.	.13
+	HYDROGRAPH AT	LA09I	131.	4.47	19.	5.	3.	.13
+	3 COMBINED AT	CX10	1301.	5.23	429.	113.	81.	3.57
+	ROUTED TO	RX10	1292.	5.37	428.	113.	81.	3.57
+	HYDROGRAPH AT	A99V	276.	4.40	35.	9.	6.	.21

+	2 COMBINED AT	CA99V	1307.	5.37	445.	119.	86.	3.77
+	HYDROGRAPH AT	A10	347.	4.23	33.	8.	6.	.21
+	HYDROGRAPH AT	A99W	237.	4.57	46.	12.	8.	.22
+	DIVERSION TO	LA99WD	211.	4.37	14.	3.	2.	.22
+	HYDROGRAPH AT	LA99W	237.	4.57	33.	8.	6.	.22
+	4 COMBINED AT	AFR3	2411.	5.23	972.	259.	187.	10.22
+	HYDROGRAPH AT	DRA09G	150.	4.73	48.	12.	9.	2.04
+	ROUTED TO	RA09GS	150.	5.60	48.	12.	9.	2.04
+	HYDROGRAPH AT	A09F	426.	4.53	84.	21.	15.	.37
+	DIVERSION TO	LA09FD	392.	4.37	27.	7.	5.	.37
+	HYDROGRAPH AT	LA09F	426.	4.53	57.	14.	10.	.37
+	2 COMBINED AT	CA09F	426.	4.53	109.	27.	20.	.37
+	DIVERSION TO	A09FI	65.	4.53	12.	3.	2.	.37
+	HYDROGRAPH AT	DA09F	360.	4.53	97.	24.	18.	.37
+	ROUTED TO	RA09FW	363.	4.63	97.	24.	18.	.37
+	HYDROGRAPH AT	A09E	148.	4.33	33.	8.	6.	.15
+	DIVERSION TO	LA09ED	148.	4.33	17.	4.	3.	.15
+	HYDROGRAPH AT	LA09E	123.	4.67	17.	4.	3.	.15
+	2 COMBINED AT	CA09E	478.	4.67	113.	29.	21.	.51
+	ROUTED TO	RA09E	443.	4.83	113.	29.	21.	.51
+	HYDROGRAPH AT	A09D	577.	4.13	62.	15.	11.	.25
	DIVERSION TO							

+		LA09DD	577.	4.13	31.	8.	6.	.25
+	HYDROGRAPH AT	LA09D	553.	4.20	31.	8.	6.	.25
+	2 COMBINED AT	CA09C*	458.	4.23	139.	35.	25.	.77
+	ROUTED TO	RA09C*	452.	4.87	139.	35.	25.	.77
+	HYDROGRAPH AT	A09C	78.	4.40	11.	3.	2.	.07
+	2 COMBINED AT	CA09C	480.	4.27	148.	38.	27.	.84
+	ROUTED TO	RA09C	469.	4.97	148.	38.	27.	.84
+	HYDROGRAPH AT	A09B	115.	4.07	12.	3.	2.	.04
+	ROUTED TO	RA09B	91.	4.50	11.	3.	2.	.04
+	HYDROGRAPH AT	A09A	72.	4.57	18.	4.	3.	.08
+	3 COMBINED AT	CA09A	556.	4.40	172.	44.	32.	.96
+	DIVERSION TO	A09AI	416.	4.40	86.	21.	15.	.96
+	HYDROGRAPH AT	DA09AO	140.	4.40	87.	23.	16.	.96
+	ROUTED TO	RA09AW	140.	6.20	85.	23.	16.	.96
+	HYDROGRAPH AT	A99T	83.	4.03	6.	1.	1.	.03
+	DIVERSION TO	LA99TD	16.	3.73	1.	0.	0.	.03
+	HYDROGRAPH AT	LA99T	83.	4.03	5.	1.	1.	.03
+	ROUTED TO	RA99T	70.	4.17	5.	1.	1.	.03
+	HYDROGRAPH AT	A09	249.	4.30	30.	8.	5.	.18
+	3 COMBINED AT	CA09	241.	4.27	109.	30.	22.	1.17
+	HYDROGRAPH AT	A99U	82.	4.30	13.	3.	2.	.07
+	3 COMBINED AT	AFR4	2396.	5.27	1057.	284.	204.	11.46

+	HYDROGRAPH AT	A99S	47.	4.63	10.	2.	2.	.08
+	HYDROGRAPH AT	A08A	70.	4.80	22.	6.	4.	.14
+	ROUTED TO	RA08A	69.	4.97	22.	6.	4.	.14
+	HYDROGRAPH AT	A99R	57.	4.20	6.	1.	1.	.04
+	ROUTED TO	RA99R	51.	4.47	6.	1.	1.	.04
+	HYDROGRAPH AT	A08	185.	4.07	11.	3.	2.	.08
+	4 COMBINED AT	CA08	195.	4.07	47.	12.	9.	.33
+	2 COMBINED AT	AFR5	2429.	5.27	1076.	289.	208.	11.79
+	HYDROGRAPH AT	A07G.1	425.	4.20	60.	15.	11.	.23
+	DIVERSION TO	LA07GD	425.	4.17	26.	7.	5.	.23
+	HYDROGRAPH AT	LA07G	410.	4.23	34.	9.	6.	.23
+	ROUTED TO	RA07G	348.	4.47	34.	9.	6.	.23
+	HYDROGRAPH AT	A07F.1	96.	4.63	28.	7.	5.	.13
+	HYDROGRAPH AT	A07F.2	61.	4.43	14.	3.	2.	.07
+	HYDROGRAPH AT	A07E.8	16.	4.03	2.	0.	0.	.01
+	3 COMBINED AT	CA07F	156.	4.53	43.	11.	8.	.21
+	ROUTED TO	RA07F	155.	4.57	43.	11.	8.	.21
+	HYDROGRAPH AT	A07E.7	19.	4.03	2.	0.	0.	.01
+	2 COMBINED AT	CA07E7	156.	4.53	45.	11.	8.	.22
+	ROUTED TO	RA07E7	156.	4.60	45.	11.	8.	.22
+	HYDROGRAPH AT	A07G.2	23.	4.30	6.	1.	1.	.03

+	ROUTED TO	RA07G2	23.	4.40	6.	1.	1.	.03
+	HYDROGRAPH AT	A07E.3	145.	4.10	15.	4.	3.	.06
+	2 COMBINED AT	CA07E3	155.	4.10	20.	5.	4.	.09
+	DIVERSION TO	DI7E.3	2.	1.17	0.	0.	0.	.09
+	HYDROGRAPH AT	DI7E.3	155.	4.10	20.	5.	4.	.09
+	ROUTED TO	RA07E3	150.	4.20	20.	5.	4.	.09
+	HYDROGRAPH AT	A07E.2	46.	4.13	6.	1.	1.	.03
+	DIVERSION TO	DI7E.2	0.	1.40	0.	0.	0.	.03
+	HYDROGRAPH AT	DI7E.2	46.	4.13	6.	1.	1.	.03
+	ROUTED TO	RA07E2	42.	4.40	6.	1.	1.	.03
+	HYDROGRAPH AT	A07E.1	64.	4.17	11.	3.	2.	.04
+	DIVERSION TO	DI7E.1	45.	4.00	3.	1.	1.	.04
+	HYDROGRAPH AT	DI7E.1	64.	4.17	8.	2.	1.	.04
+	ROUTED TO	RA07E1	62.	4.30	8.	2.	1.	.04
+	HYDROGRAPH AT	A07E.6	66.	4.03	6.	2.	1.	.02
+	DIVERSION TO	DI7E.6	1.	1.53	0.	0.	0.	.02
+	HYDROGRAPH AT	DI7E.6	66.	4.03	6.	1.	1.	.02
+	ROUTED TO	RA07E6	63.	4.10	6.	1.	1.	.02
+	HYDROGRAPH AT	A07E.5	81.	4.10	10.	3.	2.	.04
+	2 COMBINED AT	CA07E5	144.	4.10	16.	4.	3.	.05
+	ROUTED TO	RA07E5	140.	4.13	16.	4.	3.	.05
	HYDROGRAPH AT							

+		A07E.4	122.	4.13	16.	4.	3.	.06
+	5 COMBINED AT	CA07E4	457.	4.23	66.	17.	12.	.26
+	DIVERSION TO	DI7E.4	6.	2.40	1.	0.	0.	.26
+	HYDROGRAPH AT	DI7E.4	457.	4.23	65.	16.	12.	.26
+	3 COMBINED AT	CA07E	757.	4.47	141.	36.	26.	.72
+	DIVERSION TO	DIA07E	68.	3.70	6.	1.	1.	.72
+	HYDROGRAPH AT	DIA07E	757.	4.47	137.	34.	25.	.72
+	ROUTED TO	RA07E	738.	4.53	137.	34.	25.	.72
+	HYDROGRAPH AT	A07C	187.	4.43	29.	7.	5.	.17
+	2 COMBINED AT	CA07C	874.	4.53	162.	41.	29.	.89
+	ROUTED TO	RA07C	866.	4.57	162.	41.	29.	.89
+	HYDROGRAPH AT	A07H	217.	4.13	23.	6.	4.	.09
+	ROUTED TO	RA07H	202.	4.27	23.	6.	4.	.09
+	HYDROGRAPH AT	DA09AI	416.	4.40	86.	21.	15.	.96
+	ROUTED TO	RA09AI	378.	5.17	86.	21.	15.	.96
+	HYDROGRAPH AT	A08B	122.	4.37	20.	5.	4.	.10
+	2 COMBINED AT	CA08B	560.	4.60	115.	29.	21.	.10
+	ROUTED TO	RA08B	480.	4.90	115.	29.	21.	.10
+	HYDROGRAPH AT	A07D	117.	5.03	39.	10.	7.	.23
+	4 COMBINED AT	CA07D	1045.	4.57	312.	79.	57.	1.31
+	ROUTED TO	RA07D	1013.	4.77	312.	79.	57.	1.31
+	HYDROGRAPH AT	S30D	209.	4.23	32.	8.	6.	.13

+	ROUTED TO	RS30D	198.	4.53	32.	8.	6.	.13
+	HYDROGRAPH AT	S30C	496.	4.40	116.	29.	21.	.45
+	HYDROGRAPH AT	DA09FI	65.	4.53	12.	3.	2.	.37
+	ROUTED TO	RA09FI	49.	5.13	12.	3.	2.	.37
+	3 COMBINED AT	XX1	671.	4.50	158.	40.	29.	.58
+	HYDROGRAPH AT	S30B	311.	4.73	86.	22.	16.	.40
+	2 COMBINED AT	CS30B	892.	4.57	237.	60.	43.	.98
+	DIVERSION TO	DS30BI	342.	4.57	36.	9.	7.	.98
+	HYDROGRAPH AT	DS30BO	550.	4.47	200.	51.	37.	.98
+	ROUTED TO	RS30BW	550.	4.90	200.	51.	37.	.98
+	HYDROGRAPH AT	S30A	524.	4.43	120.	30.	22.	.53
+	2 COMBINED AT	CS30A	995.	4.60	313.	80.	58.	1.51
+	DIVERSION TO	DS30AI	445.	4.60	68.	17.	12.	1.51
+	HYDROGRAPH AT	DS30AO	550.	4.37	245.	63.	45.	1.51
+	ROUTED TO	RS30AW	550.	4.67	245.	63.	45.	1.51
+	HYDROGRAPH AT	S30	418.	4.23	65.	16.	12.	.32
+	2 COMBINED AT	CS30	839.	4.40	302.	78.	56.	1.84
+	ROUTED TO	RS30	838.	4.43	302.	78.	56.	1.84
+	HYDROGRAPH AT	A07B	936.	4.20	123.	31.	22.	.65
+	DIVERSION TO	LA07BD	877.	4.13	39.	10.	7.	.65
+	HYDROGRAPH AT	LA07B	923.	4.23	85.	21.	15.	.65

```
+
1
        3 COMBINED AT
                        CA07B      1915.    4.47        636.        163.        118.       3.80
```

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
FOR STORM = 1 STORM AREA (SQ MI) = .01									
RCBA	MANE	2.00	16.20	252.00	1.88	2.00	16.20	252.00	1.88

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .7029E+00 EXCESS= .0000E+00 OUTFLOW= .7028E+00 BASIN STORAGE= .6822E-03 PERCENT ERROR=
-.1
```

FOR STORM = 2 STORM AREA (SQ MI) = .50									
RCBA	MANE	2.00	16.06	252.00	1.87	2.00	16.06	252.00	1.87

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .6964E+00 EXCESS= .0000E+00 OUTFLOW= .6964E+00 BASIN STORAGE= .6790E-03 PERCENT ERROR=
-.1
```

FOR STORM = 3 STORM AREA (SQ MI) = 2.80									
RCBA	MANE	2.00	9.23	252.00	1.65	2.00	9.23	252.00	1.65

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .6177E+00 EXCESS= .0000E+00 OUTFLOW= .6177E+00 BASIN STORAGE= .6721E-03 PERCENT ERROR=
-.1
```


FOR STORM = 4 STORM AREA (SQ MI) = 16.00									
RCBA	MANE	2.00	6.93	254.00	1.38	2.00	6.93	254.00	1.38

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5170E+00 EXCESS= .0000E+00 OUTFLOW= .5169E+00 BASIN STORAGE= .6849E-03 PERCENT ERROR=
-.1
```

FOR STORM = 5 STORM AREA (SQ MI) = 90.00									
RCBA	MANE	2.00	4.43	254.00	.98	2.00	4.43	254.00	.98

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3666E+00 EXCESS= .0000E+00 OUTFLOW= .3665E+00 BASIN STORAGE= .7026E-03 PERCENT ERROR=
-.2
```

FOR STORM = 1 STORM AREA (SQ MI) = .01									
RCBB	MANE	2.00	40.33	246.00	1.67	2.00	40.33	246.00	1.67

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1511E+01 EXCESS= .0000E+00 OUTFLOW= .1511E+01 BASIN STORAGE= .4107E-03 PERCENT ERROR=
.0
```

FOR STORM = 2 STORM AREA (SQ MI) = .50									
RCBB	MANE	2.00	39.98	246.00	1.65	2.00	39.98	246.00	1.65

```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+01 EXCESS= .0000E+00 OUTFLOW= .1496E+01 BASIN STORAGE= .4087E-03 PERCENT ERROR=
.0
```

FOR STORM = 3 STORM AREA (SQ MI) = 2.80									
RCBB	MANE	2.00	20.79	248.00	1.37	2.00	20.79	248.00	1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1240E+01 EXCESS= .0000E+00 OUTFLOW= .1240E+01 BASIN STORAGE= .4385E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RCBB	MANE	2.00	14.74	248.00	1.08	2.00	14.74	248.00	1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9835E+00 EXCESS= .0000E+00 OUTFLOW= .9836E+00 BASIN STORAGE= .4458E-03 PERCENT ERROR= -.1

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RCBB	MANE	2.00	8.21	248.00	.70	2.00	8.21	248.00	.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6322E+00 EXCESS= .0000E+00 OUTFLOW= .6323E+00 BASIN STORAGE= .4268E-03 PERCENT ERROR= -.1

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

R28a	MANE	2.00	93.47	258.00	1.69	2.00	93.47	258.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4661E+01 EXCESS= .0000E+00 OUTFLOW= .4606E+01 BASIN STORAGE= .2152E-02 PERCENT ERROR= 1.1

FOR STORM = 2 STORM AREA (SQ MI) = .50

R28a	MANE	2.00	92.51	258.00	1.68	2.00	92.51	258.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4611E+01 EXCESS= .0000E+00 OUTFLOW= .4556E+01 BASIN STORAGE= .2141E-02 PERCENT ERROR= 1.1

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

R28a	MANE	2.00	61.51	262.00	1.52	2.00	61.51	262.00	1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4171E+01 EXCESS= .0000E+00 OUTFLOW= .4140E+01 BASIN STORAGE= .2113E-02 PERCENT ERROR= .7

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

R28a	MANE	2.00	46.45	264.00	1.28	2.00	46.45	264.00	1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3518E+01 EXCESS= .0000E+00 OUTFLOW= .3492E+01 BASIN STORAGE= .2118E-02 PERCENT ERROR= .7

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R28a	MANE	2.00	30.11	270.00	.90	2.00	30.11	270.00	.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2479E+01 EXCESS= .0000E+00 OUTFLOW= .2462E+01 BASIN STORAGE= .2175E-02 PERCENT ERROR= .6

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

RCBL	MANE	2.00	261.85	258.00	1.87	2.00	261.85	258.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1649E+02 EXCESS= .0000E+00 OUTFLOW= .1650E+02 BASIN STORAGE= .7427E-04 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RCBL	MANE	2.00	259.55	258.00	1.86	2.00	259.55	258.00	1.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1633E+02 EXCESS= .0000E+00 OUTFLOW= .1634E+02 BASIN STORAGE= .7378E-04 PERCENT ERROR= .0

```
FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBL  MANE         2.00    186.09    260.00      1.70      2.00    186.09    260.00        1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+02 EXCESS= .0000E+00 OUTFLOW= .1495E+02 BASIN STORAGE= .7962E-04 PERCENT ERROR=
.0

FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RCBL  MANE         2.00    141.36    262.00      1.45      2.00    141.36    262.00        1.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1280E+02 EXCESS= .0000E+00 OUTFLOW= .1280E+02 BASIN STORAGE= .7387E-04 PERCENT ERROR=
.0

FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBL  MANE         2.00     91.72    270.00      1.06      2.00     91.72    270.00        1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9365E+01 EXCESS= .0000E+00 OUTFLOW= .9364E+01 BASIN STORAGE= .7616E-04 PERCENT ERROR=
.0

FOR STORM = 1  STORM AREA (SQ MI) =        .01
    RCBK  MANE         1.21    345.61    254.80      1.79      2.00    344.17    254.00        1.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2075E+02 EXCESS= .0000E+00 OUTFLOW= .2075E+02 BASIN STORAGE= .3977E-03 PERCENT ERROR=
.0

FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RCBK  MANE         1.21    341.62    255.52      1.77      2.00    340.43    256.00        1.77
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2053E+02 EXCESS= .0000E+00 OUTFLOW= .2053E+02 BASIN STORAGE= .3927E-03 PERCENT ERROR=
.0

FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RCBK  MANE         1.35    231.84    261.32      1.58      2.00    230.58    262.00        1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1832E+02 EXCESS= .0000E+00 OUTFLOW= .1832E+02 BASIN STORAGE= .3845E-03 PERCENT ERROR=
.0

FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RCBK  MANE         1.47    172.48    263.68      1.33      2.00    172.08    264.00        1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1534E+02 EXCESS= .0000E+00 OUTFLOW= .1534E+02 BASIN STORAGE= .3787E-03 PERCENT ERROR=
.0

FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RCBK  MANE         1.69    105.90    269.24       .93      2.00    105.53    268.00         .93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1082E+02 EXCESS= .0000E+00 OUTFLOW= .1082E+02 BASIN STORAGE= .3902E-03 PERCENT ERROR=
.0

FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R15  MANE         1.59    364.60    255.19      1.68      2.00    364.40    256.00        1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2207E+02 EXCESS= .0000E+00 OUTFLOW= .2207E+02 BASIN STORAGE= .5519E-03 PERCENT ERROR=
.0
```

```
          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               R15  MANE         1.59    361.32    256.10      1.66      2.00    361.17    256.00        1.66


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2182E+02 EXCESS= .0000E+00 OUTFLOW= .2182E+02 BASIN STORAGE= .5449E-03 PERCENT ERROR=
.0


          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               R15  MANE         1.78    242.06    262.19      1.47      2.00    242.04    262.00        1.47


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1925E+02 EXCESS= .0000E+00 OUTFLOW= .1925E+02 BASIN STORAGE= .5437E-03 PERCENT ERROR=
.0


          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               R15  MANE         1.94    178.96    264.24      1.22      2.00    178.70    264.00        1.22


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1604E+02 EXCESS= .0000E+00 OUTFLOW= .1604E+02 BASIN STORAGE= .5145E-03 PERCENT ERROR=
.0


          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               R15  MANE         2.00    108.84    270.00       .86      2.00    108.84    270.00         .86


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1122E+02 EXCESS= .0000E+00 OUTFLOW= .1122E+02 BASIN STORAGE= .5202E-03 PERCENT ERROR=
.0


          FOR STORM = 1  STORM AREA (SQ MI) =        .01
               RE1  MANE         2.00     31.63    248.00      1.33      2.00     31.63    248.00        1.33
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .9906E+00 EXCESS= .0000E+00 OUTFLOW= .9916E+00 BASIN STORAGE= .9785E-03 PERCENT ERROR=
-.2


          FOR STORM = 2  STORM AREA (SQ MI) =        .50
               RE1  MANE         2.00     31.33    248.00      1.31      2.00     31.33    248.00        1.31


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9789E+00 EXCESS= .0000E+00 OUTFLOW= .9800E+00 BASIN STORAGE= .9741E-03 PERCENT ERROR=
-.2


          FOR STORM = 3  STORM AREA (SQ MI) =       2.80
               RE1  MANE         2.00     14.94    250.00       .98      2.00     14.94    250.00         .98


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7298E+00 EXCESS= .0000E+00 OUTFLOW= .7305E+00 BASIN STORAGE= .9297E-03 PERCENT ERROR=
-.2


          FOR STORM = 4  STORM AREA (SQ MI) =      16.00
               RE1  MANE         2.00      9.90    250.00       .66      2.00      9.90    250.00         .66


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4921E+00 EXCESS= .0000E+00 OUTFLOW= .4924E+00 BASIN STORAGE= .9535E-03 PERCENT ERROR=
-.3


          FOR STORM = 5  STORM AREA (SQ MI) =      90.00
               RE1  MANE         2.00      4.48    252.00       .29      2.00      4.48    252.00         .29


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2165E+00 EXCESS= .0000E+00 OUTFLOW= .2165E+00 BASIN STORAGE= .9318E-03 PERCENT ERROR=
-.4
```

```
FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE2  MANE        2.00     28.17    248.00      1.48      2.00     28.17    248.00        1.48


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1266E+01 EXCESS= .0000E+00 OUTFLOW= .1266E+01 BASIN STORAGE= .4434E-03 PERCENT ERROR=
-.1


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE2  MANE        2.00     27.90    248.00      1.47      2.00     27.90    248.00        1.47


CONTINUITY SUMMARY (AC-FT) - INFLOW= .1251E+01 EXCESS= .0000E+00 OUTFLOW= .1252E+01 BASIN STORAGE= .4414E-03 PERCENT ERROR=
-.1


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE2  MANE        2.00     15.28    250.00      1.14      2.00     15.28    250.00        1.14


CONTINUITY SUMMARY (AC-FT) - INFLOW= .9756E+00 EXCESS= .0000E+00 OUTFLOW= .9758E+00 BASIN STORAGE= .4537E-03 PERCENT ERROR=
-.1


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE2  MANE        2.00     10.53    250.00       .83      2.00     10.53    250.00         .83


CONTINUITY SUMMARY (AC-FT) - INFLOW= .7092E+00 EXCESS= .0000E+00 OUTFLOW= .7093E+00 BASIN STORAGE= .4172E-03 PERCENT ERROR=
-.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE2  MANE        2.00      5.33    252.00       .45      2.00      5.33    252.00         .45
```



```
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3842E+00 EXCESS= .0000E+00 OUTFLOW= .3842E+00 BASIN STORAGE= .4384E-03 PERCENT ERROR=
-.1


FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R13  MANE        2.00    178.99    250.00      1.45      2.00    178.99    250.00        1.45


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6914E+01 EXCESS= .0000E+00 OUTFLOW= .6896E+01 BASIN STORAGE= .1287E-02 PERCENT ERROR=
.2


FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R13  MANE        2.00    177.35    250.00      1.44      2.00    177.35    250.00        1.44


CONTINUITY SUMMARY (AC-FT) - INFLOW= .6837E+01 EXCESS= .0000E+00 OUTFLOW= .6822E+01 BASIN STORAGE= .1281E-02 PERCENT ERROR=
.2


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R13  MANE        2.00     96.23    252.00      1.15      2.00     96.23    252.00        1.15


CONTINUITY SUMMARY (AC-FT) - INFLOW= .5447E+01 EXCESS= .0000E+00 OUTFLOW= .5438E+01 BASIN STORAGE= .1461E-02 PERCENT ERROR=
.1


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R13  MANE        2.00     66.74    252.00       .85      2.00     66.74    252.00         .85


CONTINUITY SUMMARY (AC-FT) - INFLOW= .4042E+01 EXCESS= .0000E+00 OUTFLOW= .4035E+01 BASIN STORAGE= .1282E-02 PERCENT ERROR=
.1


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
```

```
     R13  MANE        2.00     35.14    256.00       .48      2.00     35.14    256.00        .48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2285E+01 EXCESS= .0000E+00 OUTFLOW= .2281E+01 BASIN STORAGE= .1289E-02 PERCENT ERROR=
.1

     FOR STORM = 1  STORM AREA (SQ MI) =        .01
     RE3  MANE        2.00     74.17    266.00      1.42      2.00     74.17    266.00       1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6215E+01 EXCESS= .0000E+00 OUTFLOW= .6216E+01 BASIN STORAGE= .6845E-03 PERCENT ERROR=
.0

     FOR STORM = 2  STORM AREA (SQ MI) =        .50
     RE3  MANE        2.00     73.37    266.00      1.40      2.00     73.37    266.00       1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6143E+01 EXCESS= .0000E+00 OUTFLOW= .6143E+01 BASIN STORAGE= .6814E-03 PERCENT ERROR=
.0

     FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     RE3  MANE        2.00     48.52    268.00      1.08      2.00     48.52    268.00       1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4722E+01 EXCESS= .0000E+00 OUTFLOW= .4722E+01 BASIN STORAGE= .6793E-03 PERCENT ERROR=
.0

     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     RE3  MANE        2.00     33.13    270.00       .76      2.00     33.13    270.00        .76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3336E+01 EXCESS= .0000E+00 OUTFLOW= .3336E+01 BASIN STORAGE= .6983E-03 PERCENT ERROR=
.0
```



```
     FOR STORM = 5  STORM AREA (SQ MI) =      90.00
     RE3  MANE        2.00     16.02    272.00       .39      2.00     16.02    272.00        .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1702E+01 EXCESS= .0000E+00 OUTFLOW= .1702E+01 BASIN STORAGE= .6575E-03 PERCENT ERROR=
.0

     FOR STORM = 1  STORM AREA (SQ MI) =        .01
     R10  MANE        2.00    141.93    260.00      1.43      2.00    141.93    260.00       1.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1046E+02 EXCESS= .0000E+00 OUTFLOW= .1045E+02 BASIN STORAGE= .1845E-02 PERCENT ERROR=
.1

     FOR STORM = 2  STORM AREA (SQ MI) =        .50
     R10  MANE        2.00    140.50    260.00      1.41      2.00    140.50    260.00       1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1034E+02 EXCESS= .0000E+00 OUTFLOW= .1033E+02 BASIN STORAGE= .1818E-02 PERCENT ERROR=
.1

     FOR STORM = 3  STORM AREA (SQ MI) =       2.80
     R10  MANE        2.00     92.85    266.00      1.11      2.00     92.85    266.00       1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8091E+01 EXCESS= .0000E+00 OUTFLOW= .8080E+01 BASIN STORAGE= .1701E-02 PERCENT ERROR=
.1

     FOR STORM = 4  STORM AREA (SQ MI) =      16.00
     R10  MANE        2.00     64.26    266.00       .80      2.00     64.26    266.00        .80
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5876E+01 EXCESS= .0000E+00 OUTFLOW= .5867E+01 BASIN STORAGE= .1796E-02 PERCENT ERROR= .1

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R10	MANE	2.00	33.07	270.00	.43	2.00	33.07	270.00	.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3177E+01 EXCESS= .0000E+00 OUTFLOW= .3171E+01 BASIN STORAGE= .1875E-02 PERCENT ERROR= .1

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

RE4	MANE	2.00	33.30	264.00	1.34	2.00	33.30	264.00	1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2853E+01 EXCESS= .0000E+00 OUTFLOW= .2854E+01 BASIN STORAGE= .1069E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RE4	MANE	2.00	32.94	264.00	1.32	2.00	32.94	264.00	1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2820E+01 EXCESS= .0000E+00 OUTFLOW= .2821E+01 BASIN STORAGE= .1052E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RE4	MANE	2.00	21.16	266.00	.99	2.00	21.16	266.00	.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2115E+01 EXCESS= .0000E+00 OUTFLOW= .2115E+01 BASIN STORAGE= .1198E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RE4	MANE	2.00	14.06	268.00	.68	2.00	14.06	268.00	.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1442E+01 EXCESS= .0000E+00 OUTFLOW= .1442E+01 BASIN STORAGE= .1092E-03 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RE4	MANE	2.00	6.12	270.00	.31	2.00	6.12	270.00	.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6571E+00 EXCESS= .0000E+00 OUTFLOW= .6571E+00 BASIN STORAGE= .1077E-03 PERCENT ERROR= .0

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

R9	MANE	1.20	104.61	250.83	1.44	2.00	104.60	250.00	1.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7088E+01 EXCESS= .0000E+00 OUTFLOW= .7090E+01 BASIN STORAGE= .8732E-04 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

R9	MANE	1.21	103.65	249.50	1.43	2.00	103.65	250.00	1.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7006E+01 EXCESS= .0000E+00 OUTFLOW= .7008E+01 BASIN STORAGE= .8777E-04 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

R9	MANE	1.42	65.29	256.25	1.13	2.00	65.29	256.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5560E+01 EXCESS= .0000E+00 OUTFLOW= .5561E+01 BASIN STORAGE= .8130E-04 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

R9	MANE	1.57	45.78	255.48	.84	2.00	45.78	256.00	.84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4104E+01 EXCESS= .0000E+00 OUTFLOW= .4104E+01 BASIN STORAGE= .7945E-04 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R9	MANE	1.87	24.83	245.53	.47	2.00	24.48	258.00	.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2301E+01 EXCESS= .0000E+00 OUTFLOW= .2302E+01 BASIN STORAGE= .8181E-04 PERCENT ERROR= -.1

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

R7	MANE	1.71	135.73	253.30	1.45	2.00	134.52	252.00	1.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9217E+01 EXCESS= .0000E+00 OUTFLOW= .9221E+01 BASIN STORAGE= .1383E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

R7	MANE	1.72	134.06	252.28	1.44	2.00	133.30	252.00	1.44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9119E+01 EXCESS= .0000E+00 OUTFLOW= .9123E+01 BASIN STORAGE= .1401E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

R7	MANE	2.00	88.48	254.00	1.15	2.00	88.48	254.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7286E+01 EXCESS= .0000E+00 OUTFLOW= .7288E+01 BASIN STORAGE= .1238E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

R7	MANE	2.00	62.30	256.00	.85	2.00	62.30	256.00	.85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5422E+01 EXCESS= .0000E+00 OUTFLOW= .5424E+01 BASIN STORAGE= .1246E-03 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

R7	MANE	2.00	34.02	266.00	.49	2.00	34.02	266.00	.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3088E+01 EXCESS= .0000E+00 OUTFLOW= .3090E+01 BASIN STORAGE= .1296E-03 PERCENT ERROR= -.1

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

RS1	MANE	2.00	2198.73	300.00	1.70	2.00	2198.73	300.00	1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2667E+03 EXCESS= .0000E+00 OUTFLOW= .2668E+03 BASIN STORAGE= .3607E-02 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RS1	MANE	2.00	2168.25	300.00	1.69	2.00	2168.25	300.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2639E+03 EXCESS= .0000E+00 OUTFLOW= .2639E+03 BASIN STORAGE= .3673E-02 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RS1	MANE	2.00	1596.84	302.00	1.47	2.00	1596.84	302.00	1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2297E+03 EXCESS= .0000E+00 OUTFLOW= .2297E+03 BASIN STORAGE= .3616E-02 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RS1	MANE	2.00	1163.15	308.00	1.21	2.00	1163.15	308.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1889E+03 EXCESS= .0000E+00 OUTFLOW= .1889E+03 BASIN STORAGE= .3624E-02 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS1	MANE	2.00	677.57	316.00	.83	2.00	677.57	316.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1300E+03 EXCESS= .0000E+00 OUTFLOW= .1300E+03 BASIN STORAGE= .3677E-02 PERCENT ERROR= .0

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

RS2	MANE	.72	2197.08	299.67	1.70	2.00	2196.86	300.00	1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2683E+03 EXCESS= .0000E+00 OUTFLOW= .2682E+03 BASIN STORAGE= .5435E-03 PERCENT ERROR= .0

FOR STORM = 2 STORM AREA (SQ MI) = .50

RS2	MANE	.73	2165.55	300.24	1.69	2.00	2164.93	300.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2654E+03 EXCESS= .0000E+00 OUTFLOW= .2654E+03 BASIN STORAGE= .5426E-03 PERCENT ERROR= .0

FOR STORM = 3 STORM AREA (SQ MI) = 2.80

RS2	MANE	.80	1596.57	303.14	1.47	2.00	1596.42	304.00	1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2309E+03 EXCESS= .0000E+00 OUTFLOW= .2309E+03 BASIN STORAGE= .5459E-03 PERCENT ERROR= .0

FOR STORM = 4 STORM AREA (SQ MI) = 16.00

RS2	MANE	.88	1163.11	308.18	1.21	2.00	1163.09	308.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1898E+03 EXCESS= .0000E+00 OUTFLOW= .1898E+03 BASIN STORAGE= .5392E-03 PERCENT ERROR= .0

FOR STORM = 5 STORM AREA (SQ MI) = 90.00

RS2	MANE	1.04	677.43	316.76	.83	2.00	677.22	316.00	.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1305E+03 EXCESS= .0000E+00 OUTFLOW= .1305E+03 BASIN STORAGE= .5409E-03 PERCENT ERROR= .0

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

RHV2	MANE	2.00	7.08	316.00	1.75	2.00	7.08	316.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2888E+01 EXCESS= .0000E+00 OUTFLOW= .2888E+01 BASIN STORAGE= .5656E-03 PERCENT ERROR= .0

```
FOR STORM = 2  STORM AREA (SQ MI) =        .50
    RHV2  MANE         2.00      7.02    316.00      1.73      2.00      7.02    316.00        1.73


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2862E+01 EXCESS= .0000E+00 OUTFLOW= .2862E+01 BASIN STORAGE= .5630E-03 PERCENT ERROR=
.0


FOR STORM = 3  STORM AREA (SQ MI) =       2.80
    RHV2  MANE         2.00      5.93    320.00      1.50      2.00      5.93    320.00        1.50


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2483E+01 EXCESS= .0000E+00 OUTFLOW= .2483E+01 BASIN STORAGE= .5801E-03 PERCENT ERROR=
.0


FOR STORM = 4  STORM AREA (SQ MI) =      16.00
    RHV2  MANE         2.00      4.79    324.00      1.26      2.00      4.79    324.00        1.26


CONTINUITY SUMMARY (AC-FT) - INFLOW= .2081E+01 EXCESS= .0000E+00 OUTFLOW= .2080E+01 BASIN STORAGE= .5954E-03 PERCENT ERROR=
.0


FOR STORM = 5  STORM AREA (SQ MI) =      90.00
    RHV2  MANE         2.00      3.29    328.00       .92      2.00      3.29    328.00         .92

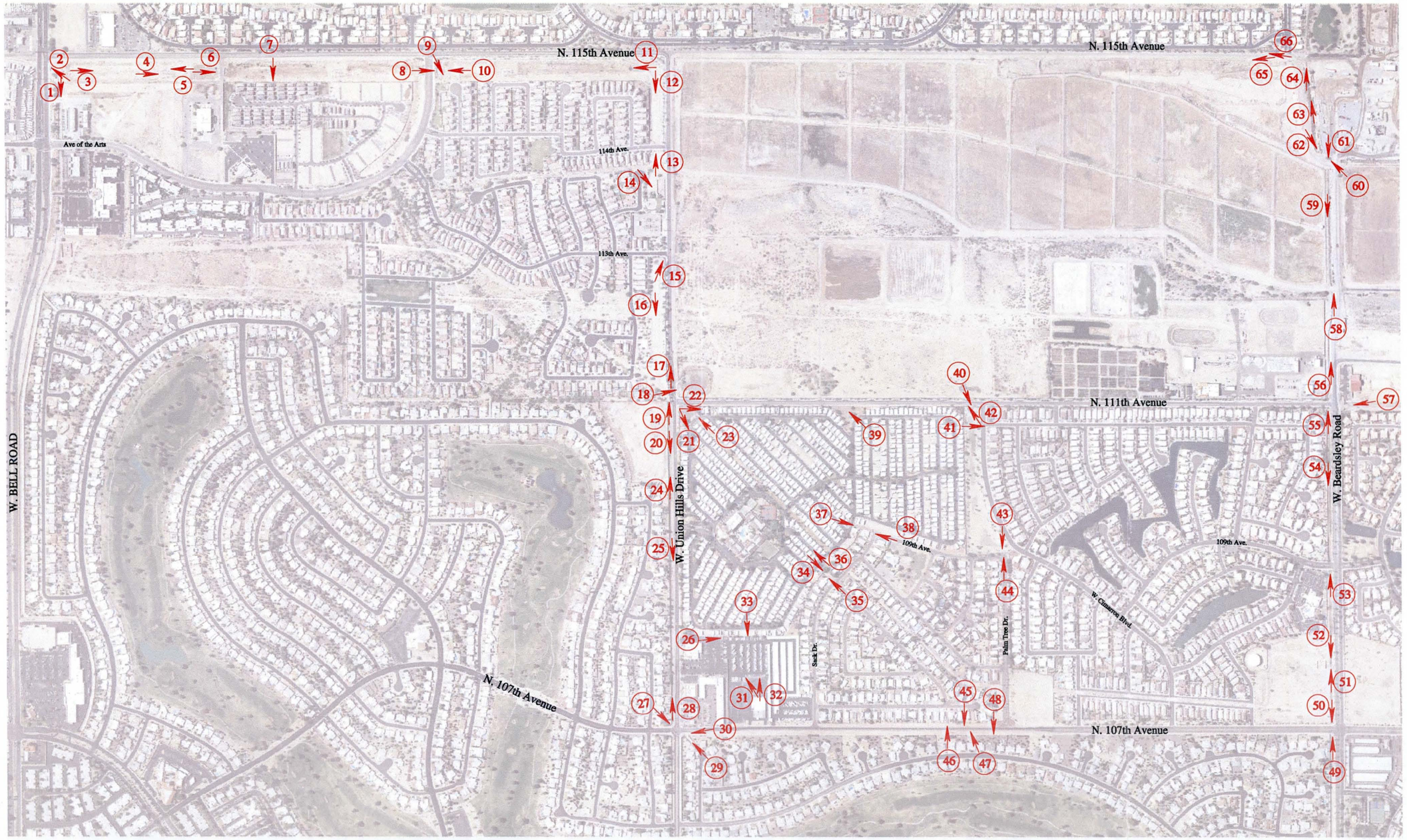

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1515E+01 EXCESS= .0000E+00 OUTFLOW= .1515E+01 BASIN STORAGE= .5886E-03 PERCENT ERROR=
.0



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

Appendix K

Site Photos



W

S

N

E

LEGEND

13 DCR SITE PHOTO NUMBER AND LOCATION

CITY OF PEORIA 1954

SURPRISE ARIZONA

Flood Control District of Maricopa County

ENGINEER/PLANNER:

GOODWIN AND MARSHALL INC.

CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS

6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

PHOTO LOCATION EXHIBIT FOR 107TH AVENUE AND UNION HILL DRIVE

CONTRACT: FCD 2009C036

CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA

MAY, 2010

W:\10388A\Prelim\Existing Facilities Exhibit.pro Thu Jun 03 10:17:08 2010

Photo 1 - Facing east in channel section adjacent to W. Bell Rd. and N. 115th Ave.

Photo 2 - Facing southwest in channel section at the intersection of W. Bell Rd. and N. 115th Ave.

Photo 3 - Facing north in channel adjacent to N 115th Ave. at the intersection of N. 115th Ave. and W. Bell Rd.

Photo 4 - Facing north in channel adjacent to N. 115th Ave. approx. 700 feet north of W. Bell Rd.

Photo 5 - Facing south in channel adjacent to N. 115th Ave. approx. 950 feet north of W. Bell Rd.

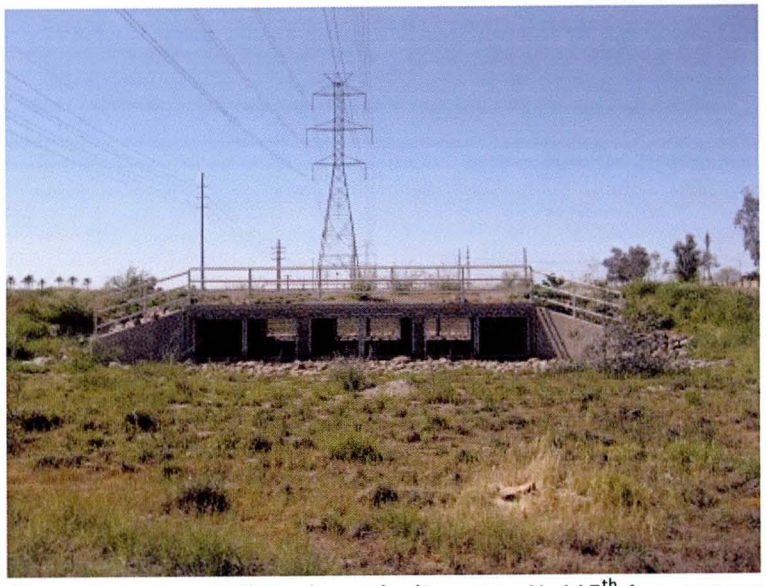


Photo 6 - Facing north in channel adjacent to N. 115th Ave. approx. 1300 feet north of W. Bell Rd.

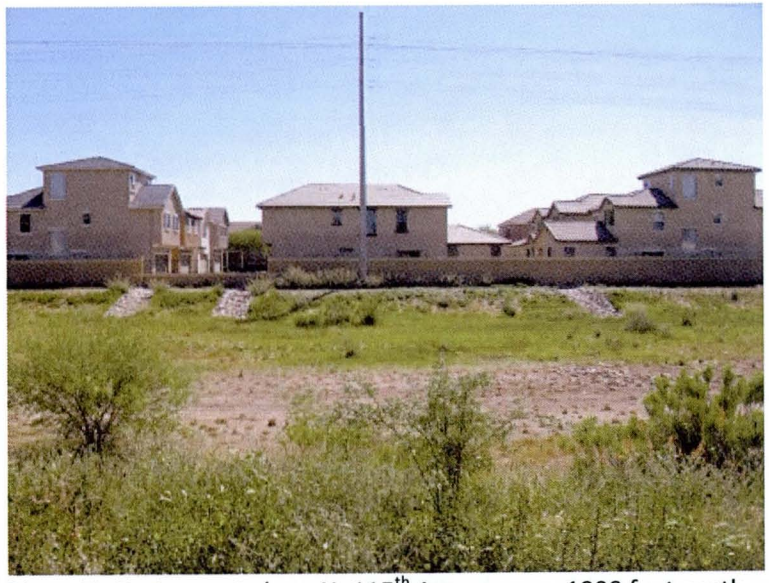


Photo 7 - Facing east along N. 115th Ave. approx. 1800 feet north of W. Bell Rd.

Photo 8 - Facing north overlooking channel adjacent to N. 115th Ave. at its intersection with the Ave. of the Arts.

Photo 9 - Facing east along N. 115th Ave. approx. 1850 feet south of W. Union Hills Dr.

Photo 10 - Facing south in channel adjacent to N. 115th Ave. approx. 1800 feet south of W. Union Hills Dr.

Photo 11 - Facing south in channel at southeast corner of intersection N. 115th Ave. and W. Union Hills Dr.

Photo 12 - Facing east in channel at southeast corner of intersection N. 115th Ave. and W. Union Hills Dr.

Photo 13 - Facing west in channel at southeast corner of intersection W. Union Hills Dr. and 114th Ave.

Photo 14 - Facing east in channel at southeast corner of intersection W. Union Hills Dr. and 114th Ave.

Photo 15 - Facing west in channel at southeast corner of intersection W. Union Hills Dr. and 113th Ave.

Photo 16 - Facing east near channel at southeast corner of intersection W. Union Hills Dr. and 113th Ave.

Photo 17 - Facing west near northwest corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 18 - Facing northwest near southwest corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 19 - Facing west along south side of W. Union Hills Dr. immediately east of N. 111th Ave.

Photo 20 - Facing east near southeast corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 21 - Facing northeast , northeast corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 22 - Facing north, northeast corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 23 - Facing southwest, northeast corner of intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 24 - Facing west, adjacent to W. Union Hill Dr. approx. 800 feet east of the intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 25 - Facing east, adjacent to W. Union Hills Dr. approx. 1200 feet east of the intersection at N. 111th Ave. and W. Union Hills Dr.

Photo 26 - Facing north approx. 800 feet west of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 27 - Facing northeast, southwest corner of intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 28 - Facing west, southwest corner of intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 29 - Facing southwest in Channel, northeast corner of intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 30 - Facing south near Channel, northeast corner of intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 31 - Facing southwest in parking lot, approx. 700 feet northwest of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 32 - Facing west in parking lot, approx. 700 feet northwest of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 33 - Facing east approx. 1000 feet northwest of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 34 - Facing northeast approx. 1000 feet north and 1400 feet west of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 35 - Facing southwest approx. 1300 feet north and 1000 feet west of the intersection at N. 107th Ave. and W Union Hills Dr.

Photo 36 - Facing northeast approx. 800 feet north and 1600 feet west of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 37 - Facing northeast approx. 1300 feet north and 1700 feet west of the intersection at N. 107th Ave. and W. Union Hills Dr.

Photo 38 - Facing southwest approx. 1000 feet east and 700 feet south of the intersection at N. 111th Ave. and W. Cimarron Blvd.

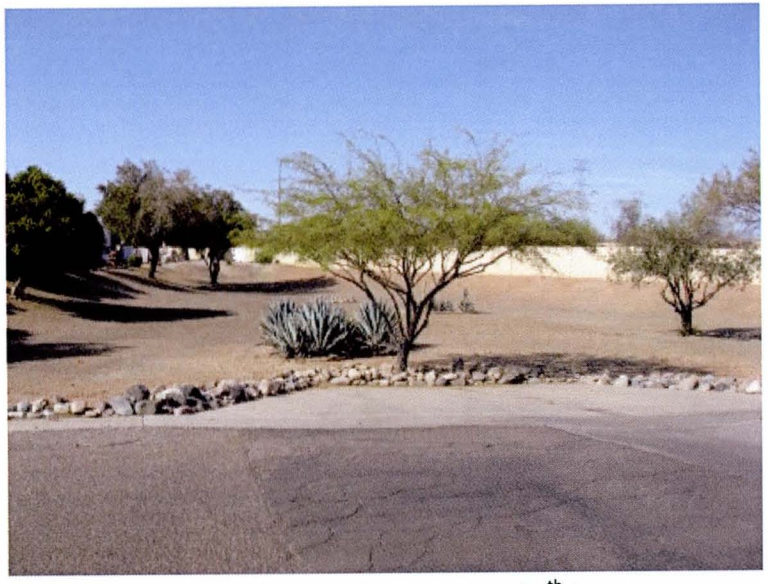


Photo 39 - Facing southwest, adjacent to N. 111th Ave., approx. 1100 feet south of W. Cimarron Blvd.

Photo 40 - Facing east along west side of N. 111th Ave. immediately south of W. Cimarron Blvd.

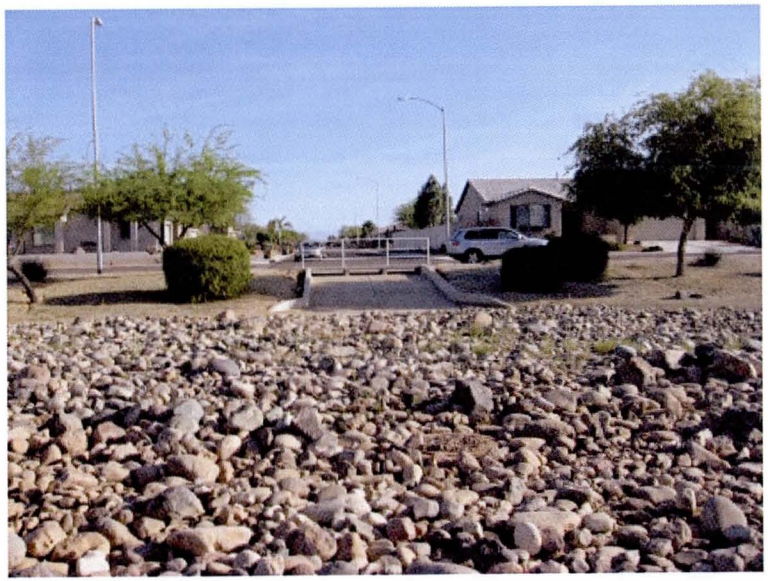


Photo 41 - Facing north, southeast corner of the intersection at N. 111th Ave. and W. Cimarron Blvd.

Photo 42 - Facing west, southeast corner of the intersection at N. 111th Ave. and W. Cimarron Blvd.

Photo 43 - Facing east adjacent to Palm Tree Dr. approx. 1200 feet east of N. 111th Ave.

Photo 44 - Facing west adjacent to Palm Tree Dr. approx. 1300 feet east of N. 111th Ave.

Photo 45 - Facing east adjacent to N. 107th Ave. approx. 2300 feet north of W. Union Hills Blvd.

Photo 46 - Facing west adjacent to N. 107th Ave. approx. 2150 feet north of W. Union Hills Blvd.

Photo 47 - Facing west adjacent to N. 107th Ave. approx. 2400 feet north of W. Union Hills Blvd.

Photo 48 - Facing east adjacent to N. 107th Ave. approx. 2550 feet north of W. Union Hills Blvd.

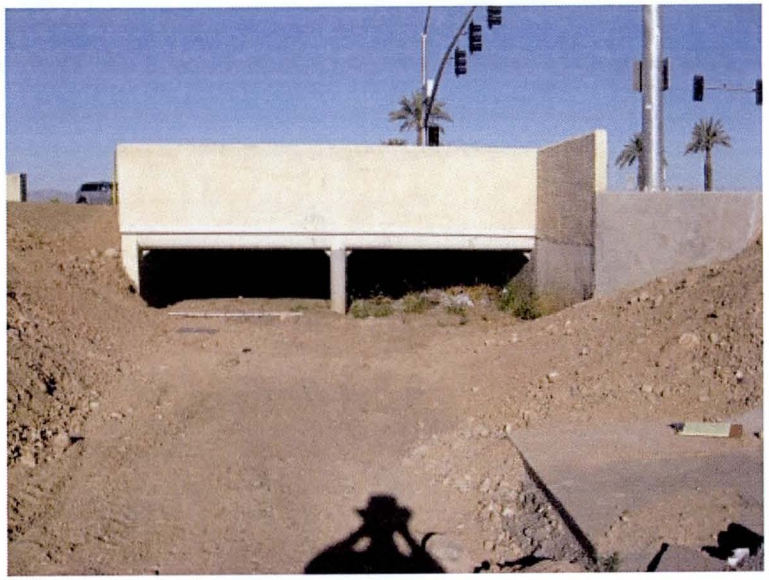


Photo 49 - Facing west in channel, southeast corner of the intersection at N. 107th Ave. and W. Beardsley Rd.

Photo 50 - Facing east in channel, southwest corner of the intersection at N. 107th Ave. and W. Beardsley Rd.

Photo 51 - Facing west in channel adjacent to W. Beardsley Rd., approx. 500 feet west of N. 107th Ave.

Photo 52 - Facing east in channel adjacent to W. Beardsley Rd., approx. 650 feet west of N. 107th Ave.

Photo 53 - Facing west in channel, southeast corner of the intersection at W. Beardsley Rd. and 109th Ave.

Photo 54 - Facing east in channel adjacent to W. Beardsley Rd. approx. 500 feet east of N. 111th Ave.

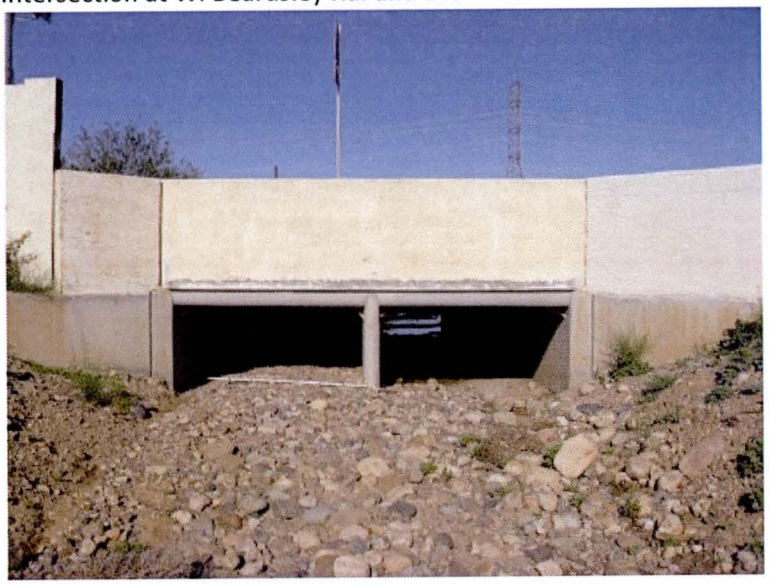


Photo 55 - Facing west in channel, southeast corner of the intersection at N. 111th Ave. and W. Beardsley Rd.

Photo 56 - Facing west, southwest corner of the intersection at N. 111th Ave. and W. Beardsley Rd.

Photo 57 - Facing south in channel, along north side of W. Beardsley Rd. and immediately west of N. 111th Ave.

Photo 58 - Facing west in channel, adjacent to W. Beardsley Rd., approx. 900 feet west of N. 111th Ave.

Photo 59 - Facing east adjacent to W. Beardsley Rd., approx. 1300 feet east of N. 115th Ave.

Photo 60 - Facing southwest, approx. 800 feet east of the intersection at N. 115th Ave. and W. Beardsley Rd.

Photo 61 - Facing east, approx. 675 feet east of the intersection at N. 115th Ave. and W. Beardsley Rd.

Photo 62 - Facing northeast, approx. 600 feet east of the intersection at N. 115th Ave. and W. Beardsley Rd.

Photo 63 - Facing west, approx. 350 feet east of the intersection at N. 115th Ave. and W. Beardsley Rd.

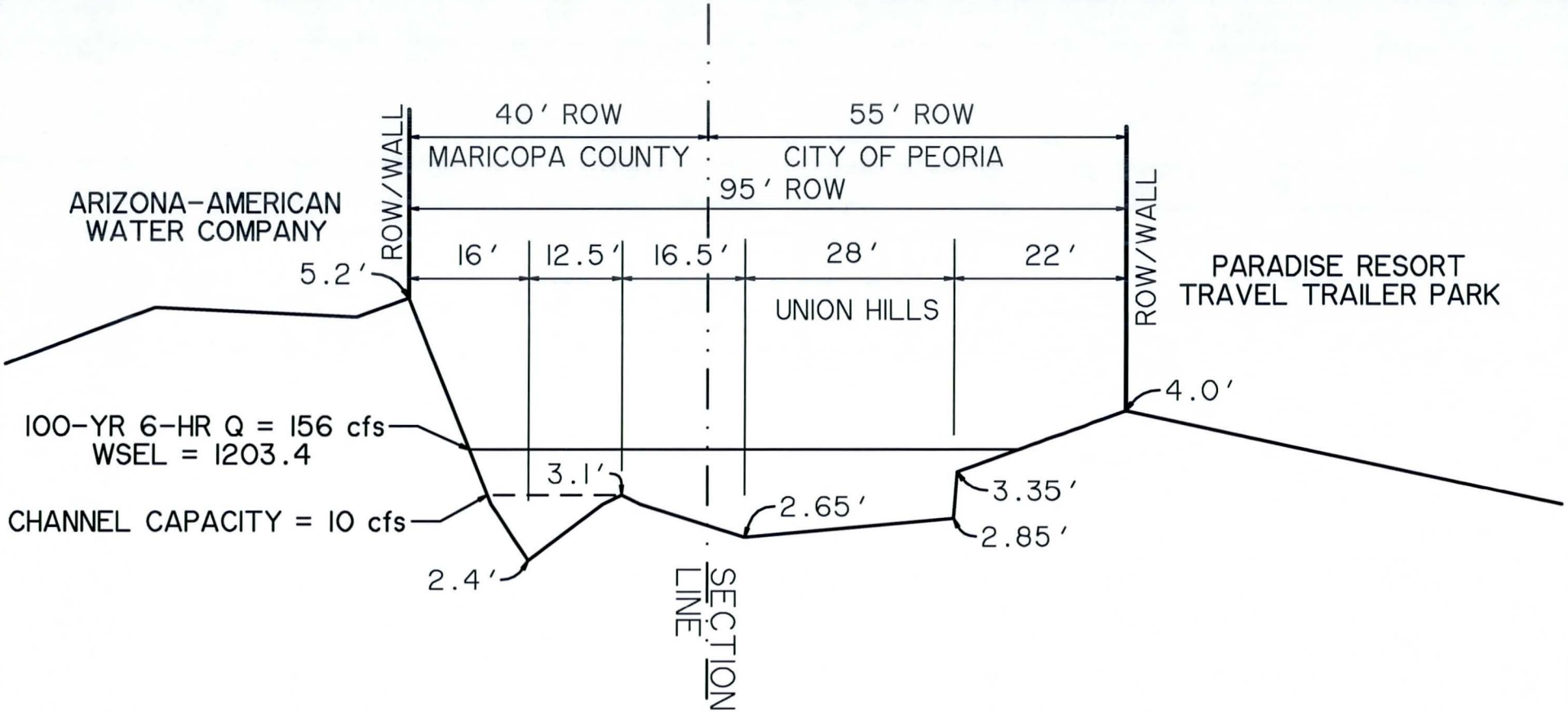
Photo 64 - Facing west, southeast corner of the intersection at N. 115th Ave. and W. Beardsley Rd.

Photo 65 - Facing south, southeast corner of the intersection at N. 115th Ave. and W. Beardsley Ave.

Photo 66 - Facing south, southwest corner of the intersection at N 115th Ave. and W. Beardsley Ave.

Appendix L

Union Hills Drive Channel Capacity



100-YEAR CAPACITY

CHANNEL CROSS SECTIONAL AREA AND HYDRAULIC RADIUS

A = 5.7 sf

WP = 17.3 ft

R = A/WP = 0.33

n (channel) = .033

n (roadway) = .016

S = .0066 ft/ft

Qcap = (1.486/n) (A) (R^2/3) (S^1/2)

Qcap = 10 cfs

SECTION D–D

Elevations per 2010 Topography

100-YEAR DISCHARGE

CHANNEL CROSS SECTIONAL AREA AND HYDRAULIC RADIUS

A = 39.9 sf

WP = 67.0 ft

R = A/WP = 0.61

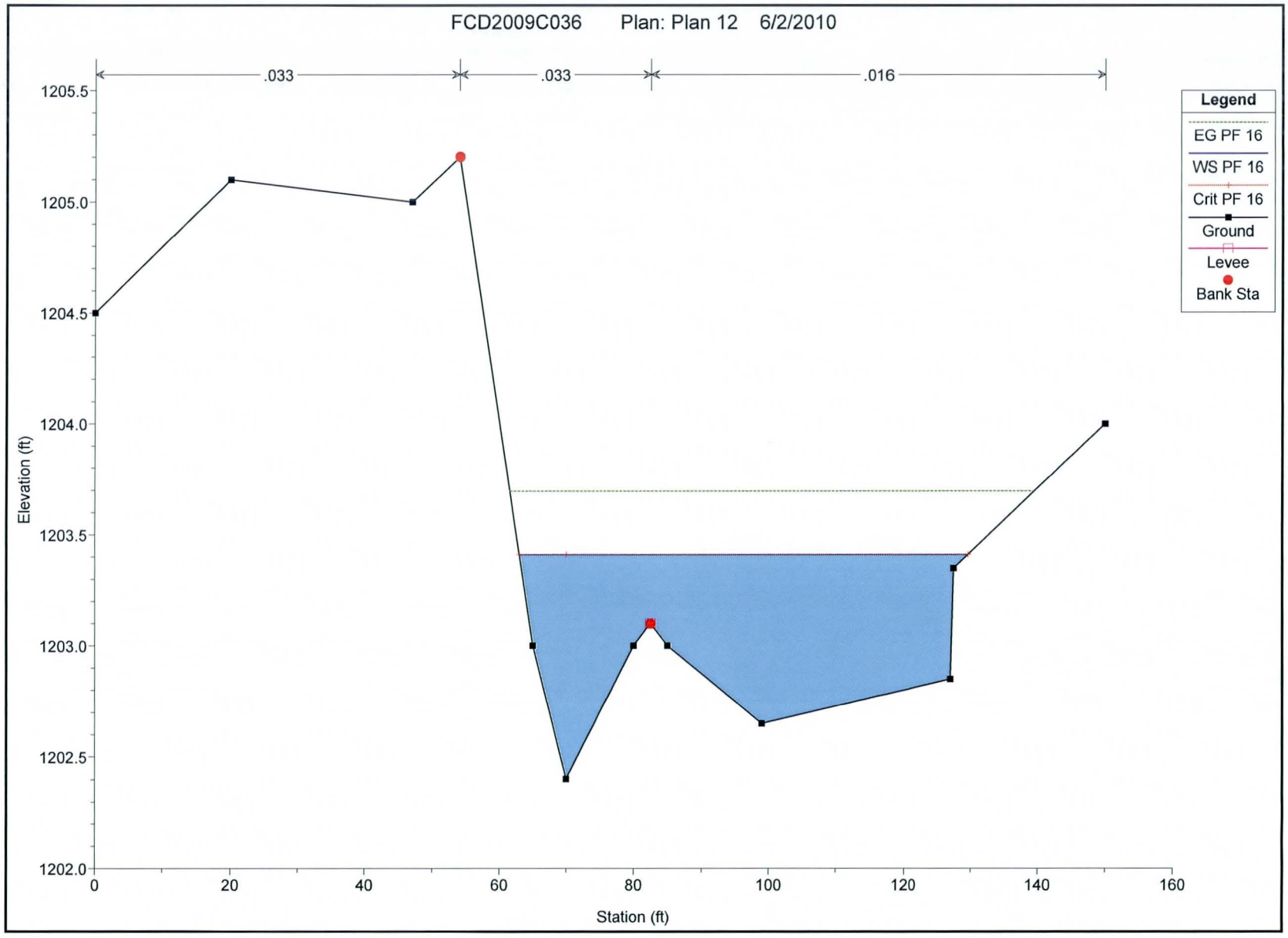
n (channel) = .033

n (roadway) = .016

S = .0066 ft/ft

Q_{100} = (1.486/n) (A) (R^2/3) (S^1/2)

Q_{100} = 156 cfs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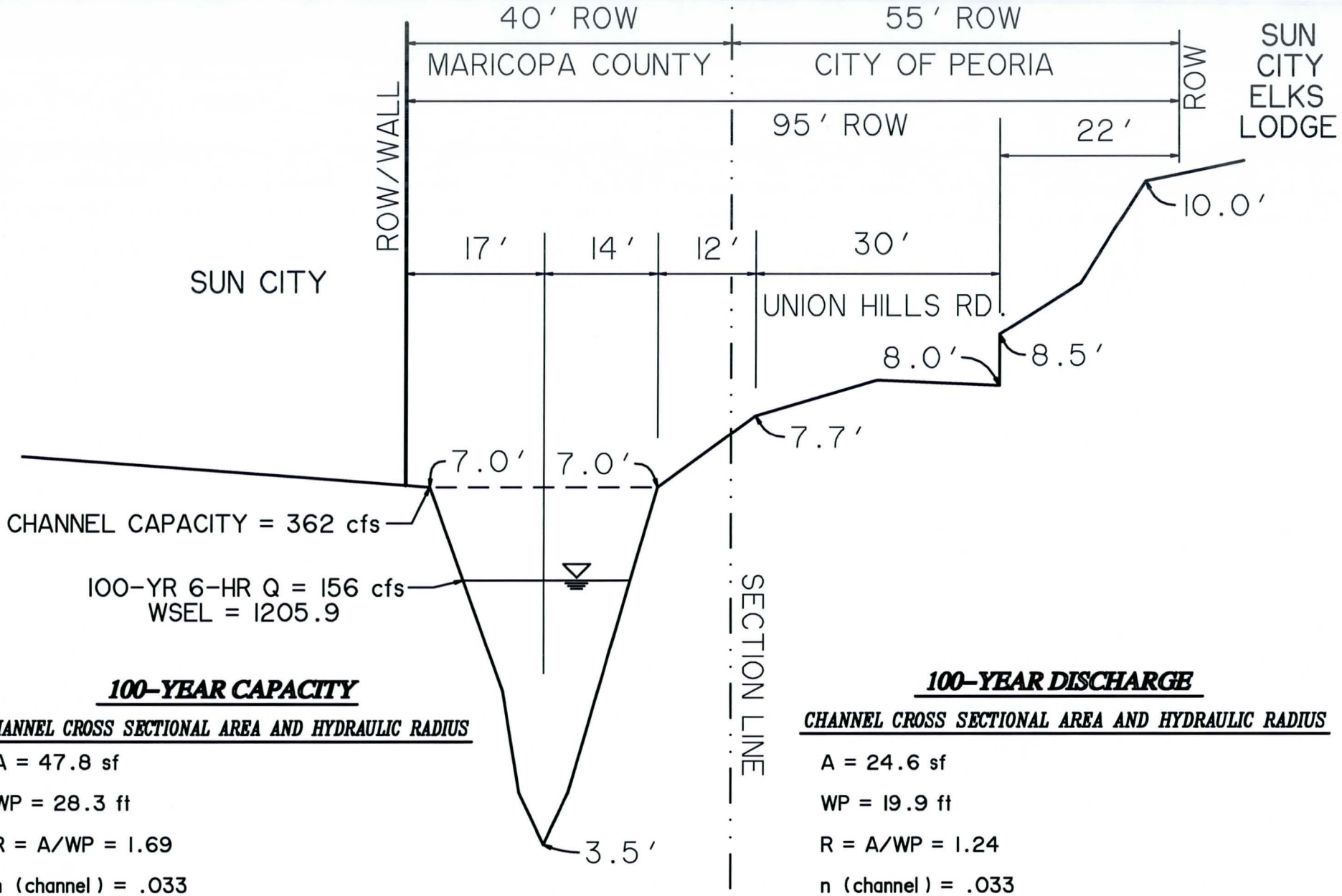
.033
.033
.016
Legend
EG PF 16
WS PF 16
Crit PF 16
Ground
Levee
Bank Sta
Elevation (ft)
1205.5
1205.0
1204.5
1204.0
1203.5
1203.0
1202.5
1202.0
0
20
40
60
80
100
120
140
160
Station (ft)



100-YEAR CAPACITY

CHANNEL CROSS SECTIONAL AREA AND HYDRAULIC RADIUS

A = 47.8 sf

WP = 28.3 ft

R = A/WP = 1.69

n (channel) = .033

n (roadway) = .016

S = .015 ft/ft

Qcap = (1.486/n) (A) (R^2/3) (S^1/2)

Qcap = 362 cfs

SECTION E-E

Elevations per 2010 Topography

100-YEAR DISCHARGE

CHANNEL CROSS SECTIONAL AREA AND HYDRAULIC RADIUS

A = 24.6 sf

WP = 19.9 ft

R = A/WP = 1.24

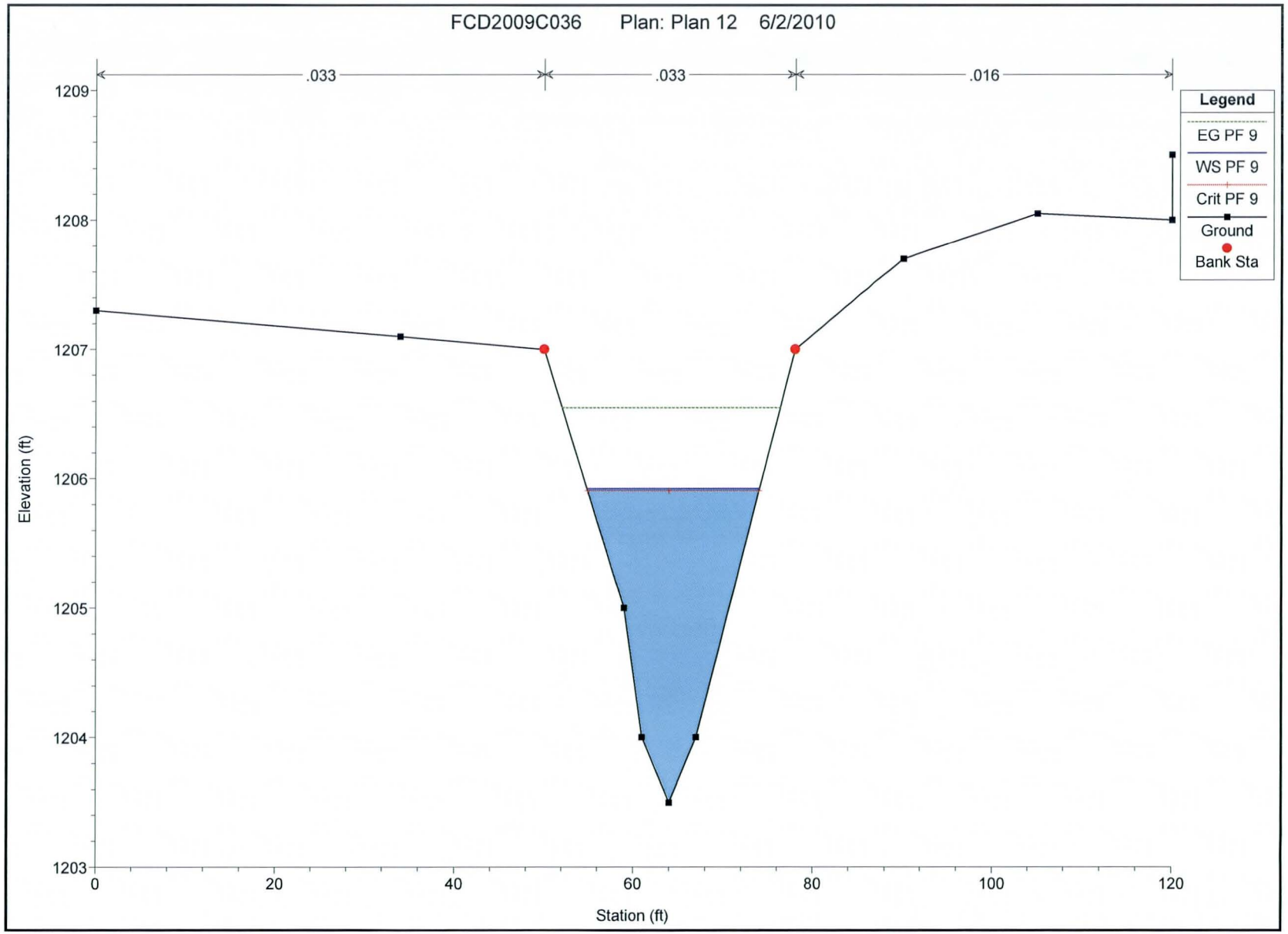
n (channel) = .033

n (roadway) = .016

S = .015 ft/ft

Q_{100} = (1.486/n) (A) (R^2/3) (S^1/2)

Q_{100} = 156 cfs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.033
.033
.016
Legend
EG PF 9
WS PF 9
Crit PF 9
Ground
Bank Sta
Elevation (ft)
1209
1208
1207
1206
1205
1204
1203
0
20
40
60
80
100
120
Station (ft)

Appendix M

Meeting Agendas and Notes

GOODWIN and MARSHALL, INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS

AGENDA

MEETING #1 - KICKOFF
107th Avenue and Union Hill Drive
Design Concept Report
Phase 1 – Analysis and Recommendations
March 25, 2010
1:00 p.m. – 5:00 p.m.

Attendees:	Valerie Swick	– FCDMC
	Bobbie Ohler	– FCDMC
	Steven Tucker	– FCDMC
	Bob Woodring	– MCDOT
	Burton Charron	– City of Peoria
	Jeff Davidson	– City of Surprise
	Warren Russell	- Goodwin and Marshall, Inc.
	Matt Goodwin	- Goodwin and Marshall, Inc.

1:00 p.m. – 2:00 p.m.	**Introductions** • Project History • Completed Area Drainage Improvements • On-Going Studies • DCR Study Goals • Current Resident Complaints • Information Request	Outlook Room City of Peoria
2:00 p.m. – 4:30 p.m.	**Field Visit** • Visit Estimated Watershed Limits • View Areas of Past Flooding • Follow Current Hydrologic Routing (Beardsley to Bell Road) and identify any areas that may need clarification in the DCR Model. • View existing hydraulic conveyance structures along 107th Ave., Union Hills Road and other areas of interest.	Field

MEETING NOTES

MEETING #1 - KICKOFF
107th Avenue and Union Hill Drive
Design Concept Report
Phase 1 – Analysis and Recommendations
March 25, 2010
1:00 p.m. – 4:00 p.m.

Attendees:	Valerie Swick (VS)	– FCDMC
	Bobbie Ohler (BO)	– FCDMC
	Steven Tucker (ST)	– FCDMC
	Burton Charron (BC)	– City of Peoria
	Jeff Davidson (JD)	– City of Surprise
	Warren Russell (WR)	- Goodwin and Marshall, Inc.
	Matt Goodwin (MG)	- Goodwin and Marshall, Inc.

The purpose of this meeting was to serve as the kick-off for the above referenced project. In addition the history, current drainage issues and DCR study goals would be discussed in detail. Upon completion of the background discussion a field visit was arranged by the FCD to view the problem areas and trace the storm water routing as shown in the current hydrologic model.

The projects history was discussed in detail with particular attention paid to the recent storm events that caused flooding through the Lake Pleasant Mobile Home Estates development and the Paradise Resort Travel Trailer Park.

VS – The Storm Report for the January 21, 2010 rainfall event will soon be available through the flood control district.

BC – The ownership of existing roadways is typically taken by the municipality located to the north and east. Additional research will need to be performed by City of Surprise and City of Peoria to determine ownership of roadways in the study area.

JD – City of Surprise will be making improvements to Union Hills from 111th to 115th. The street improvement plans do not contain regional drainage improvements and currently the City of Surprise does not intend on postponing construction of the improvements pending the findings of the DCR.

ST – The DCR shall utilize NOAA2 in the hydrologic model updates. The 10yr and 100yr - 6 hour event will be studied as part of the DCR.

BO/ST – Pinnacle Peak Road (99th Avenue to 103rd Avenue) drainage improvements are currently under design by Wood Patel and include a detention basin at Iron Wood Wash. The ADMP hydrologic model is currently being revised by Wood Patel as part of the drainage improvement plans. It was stated that the model is continually being updated as the design progresses, however the FCD would like the model incorporated into the DCR model "as is" if the Wood Patel changes affect the study area hydrology.

WR – The next coordination meeting will occur in May once the topographic information has been obtained and preliminary sub-basins have been established by G&M. The topographic information is anticipated to be provided to the flood control district by April 16th. The existing studies for the area have been prepared on NGVD 29 datum, however, the DCR topo will be prepared in NAVD 1988 datum and all necessary datum adjustments will be noted on the appropriate exhibits and within the Final Report.

It was determined that a complete list of grading & drainage plans and drainage reports should be obtained for the immediate study area in order to aid in the hydrologic evaluation. The following represents a list of major developments and roadways that G&M is requesting be provided from the applicable agency – it is understood that some of the developments and roadway are of the age that the information does not exist. If this is the case then please provide correspondence that the information could not be found. Also please verify ownership and maintenance responsibilities roadway/drainage infrastructure.

City of Peoria

- Lake Pleasant Mobile Home Estates
- Paradise Resort Travel Trailer Park
- Beardsley Road – 99th Ave to Agua Fria
- Union Hills Drive – Lake Pleasant Road to 115th Avenue
- 107th Avenue – Beardsley Rd to Union Hills
- 111th Avenue – Beardsley Rd to Union Hills

City of Surprise

- Coyote Lakes Development
- Canyon Ridge Development
- 115th Avenue - Beardsley Road to Bell Road
- Bell Road – 1000' East and West of 115th Intersection

Flood Control District of Maricopa County

- Pinnacle Peak Drainage Improvements
    - HEC-1 Update
    - PDF - Hydrologic Base Map
    - CAD – Hydrologic Base Map

A field visit was conducted from approximately 2:00 pm to 4:00 pm with various discussions on past floodings and suspected causes. It was noted that there is no organized storm drain system in Sun City, 107th Ave, Union Hills, The Lake Pleasant Mobile Home Park, or Paradise Resort Travel Trailer Park. Additionally there appeared to be a potential error in the hydrology update model in the area where the Beardsley Road flows and Union Hills Road flows are shown to enter the Coyote Lakes subdivision.

Please contact Warren Russell at wrussell@gmcivil.com should any revisions or corrections be requested.

GOODWIN and MARSHALL inc.
CIVIL ENGINEERS – PLANNERS – SURVEYORS

AGENDA

MEETING #2
107th Avenue and Union Hill Drive
Design Concept Report
Phase 1 – Analysis and Recommendations
May 11, 2010
12:00 p.m. – 1:30 p.m.

Attendees:

Valerie Swick	– FCDMC	
Bobbie Ohler	– FCDMC	
Steven Tucker	– FCDMC	
Chuck Christiansen	– MCDOT	
Burton Charron	– City of Peoria	
Jeff Davidson	– City of Surprise	
Warren Russell	- Goodwin and Marshall, Inc.	
Matt Goodwin	- Goodwin and Marshall, Inc.	

12:00 p.m. – 1:30 p.m.

- Overview of Base DCR Hydrology Model Approved By FCD
- Overview of Recommended Revisions
- Findings due to Implemented Revisions
- Discussion of Field Visit Findings
- Discuss Plans Provided by Stakeholders
- Review of Project Existing Facilities Map
- Review of Recently Acquired Project Area Topographic Data
- Overview of Modified DCR Model for Concentration Points at Areas of Interest
- Discuss Recommendations for model modifications and limitations based on available Data

Outlook Room
City of Peoria

MEETING NOTES

MEETING #2
107th Avenue and Union Hill Drive
Design Concept Report
Phase 1 – Analysis and Recommendations
May 11, 2010
12:00 p.m. – 1:30 p.m.

Attendees:	Valerie Swick (VS)	– FCDMC
	Bobbie Ohler (BO)	– FCDMC
	Steven Tucker (ST)	– FCDMC
	Burton Charron (BC)	– City of Peoria
	Jeff Davidson (JD)	– City of Surprise
	Chuck Christiansen	– MCDOT
	Warren Russell (WR)	- Goodwin and Marshall, Inc.
	Matt Goodwin (MG)	- Goodwin and Marshall, Inc.

The purpose of this meeting was to serve as an overview updated hydrologic model for the above referenced project. In addition detailed discussions were had on recommended model revisions, the existing facilities map, and maintenance responsibilities of area roadways.

- Overview of Base DCR Hydrology Model Approved By FCD
  - Glendale/Peoria ADMPU, Entellus, 2001
  - GPADMPU NWU – Wood Patel, 2007
  - NWU – Chosen as the Base
  - Study Area Extracted

- Overview of Recommended Revisions
  - Implemented
    - Pinnacle Peak Road improvements excluded
    - Happy Valley Road improvements were input into the model. The flows do not affect immediate study area at 107th and Union Hills but do affect study area at CA07B (Bell Road).
    - Routing has been amended to reflect flows along 115th Avenue to Bell rather than entering the Coyote Lakes Development.
  - Questions
    - Should further evaluation be performed at Beardsley Road and 115th to determine how the split occurs?
      - (VS) This seems appropriate and should be performed with Phase 2 of the DCR.
    - Should the model be extended to the south to where the flows exit the model (enter the Agua Fria River).
      - (VS) This seems appropriate and should be performed with Phase 2 of the DCR.

- Findings due to Implemented Revisions
  - Comparison Table – DCR Base Flows Match the GPADMPU NWU

- Discussion of Field Visit Findings
  - No Channels in Trailer Park or RV Park
  - No Formal Drainage Union Hills or 107th
  - No appreciable flows exiting Sun City to 107th
  - Small Retention Areas located in RV Park
  - No Retention in Commercial Area – Noted areas of ponding matches Mr. Charron's complaints letter.

- Discuss Plans Provided by Stakeholders
  - The Canyon Ridge Drainage Report was provided by Mr. Davidson.

- Review of Project Existing Facilities Map
  - All parties were in agreement that the existing facilities matched what had been noted in the field.
  - G&M will add the section line locations and ROW/Annexation lines to the cross-sections contained on the Existing Facilities Map.
  - G&M will add any additional retention basins within the Canyon Ridge development as noted in the drainage report provided by the City of Surprise.

- Review of Recently Acquired Project Area Topographic Data
  - It was agreed that the project area topographic data was appropriate for the Phase 1 DCR if additional topo is required then it will be obtained as part of the Phase 2 scope.

- Overview of Modified DCR Model for Concentration Points at Areas of Interest
  - Assumptions
    - Lake Storage
    - Used Small Retention areas in Trailer and RV Park
    - Hydraulic Assumptions for Routing
    - Union Hills Hydraulic Channel in Error
  - Findings
    - Comparative Table for DCR Base & Modified DCR Base
      - (ST) Flows appear to be reasonable based on further subdividing of basins and modifications discussed above.
  - All parties agreed the concentration points noted were appropriate for the Phase 1 evaluation.
  - Mr. Charron requested that a flow be identified at the location of the flume exiting Sun City at the northeast corner of the Union Hills Drive / 107th Avenue Intersection.

- Discuss Recommendations for model modifications and limitations based on available Data
  - Comparative Table
    - Flows appear to be appropriate based on further subdividing of basins and modifications discussed above.
  - Canyon Ridge Golf Course Storage should be accounted for.
    - (VS) The model will be revised to reflect this as part of Phase 2 of the DCR.
  - Split @ Golf and Union Hills
    - (ST) The current split flow at this intersection appears to be appropriate. Should further modeling be warranted it will be prepared as part of Phase 2 of the DCR.
  - Split @ Union Hills and west property line of RV Park
    - (VS) The model will be revised to reflect this as part of Phase 2 of the DCR.
  - Hydraulic Capacity of Union Hills Channel
    - (VS) The model will revised to reflect this as part of Phase 2 of the DCR.
  - Additional Hydraulic Evaluations downstream of Bell Road.
    - (VS) The model will be revised to reflect this as part of Phase 2 of the DCR.

Action Items

- FCD
  - Discuss the use of NOAA2 versus NOAA14 in the future Phase 2 of the DCR. This decision will be made as part of preparing the Phase 2 Scope.
  - Send G&M a similar Phase 2 Scope to model during scope preparation.

- City of Peoria / City of Surprise / MCDOT
  - Determine the maintenance responsibility for Union Hills.

- G&M
  - Revise the Existing Facilities Map per the comments above.
  - Modify model to provide a flow at the flume located at the northeast intersection Union Hills Drive and 107th Avenue.
  - Move forward with the preparation of the Phase 1 DCR report. Submittal date anticipated to be June 7, 2010.
  - Begin Preparation of Phase 2 Scope.

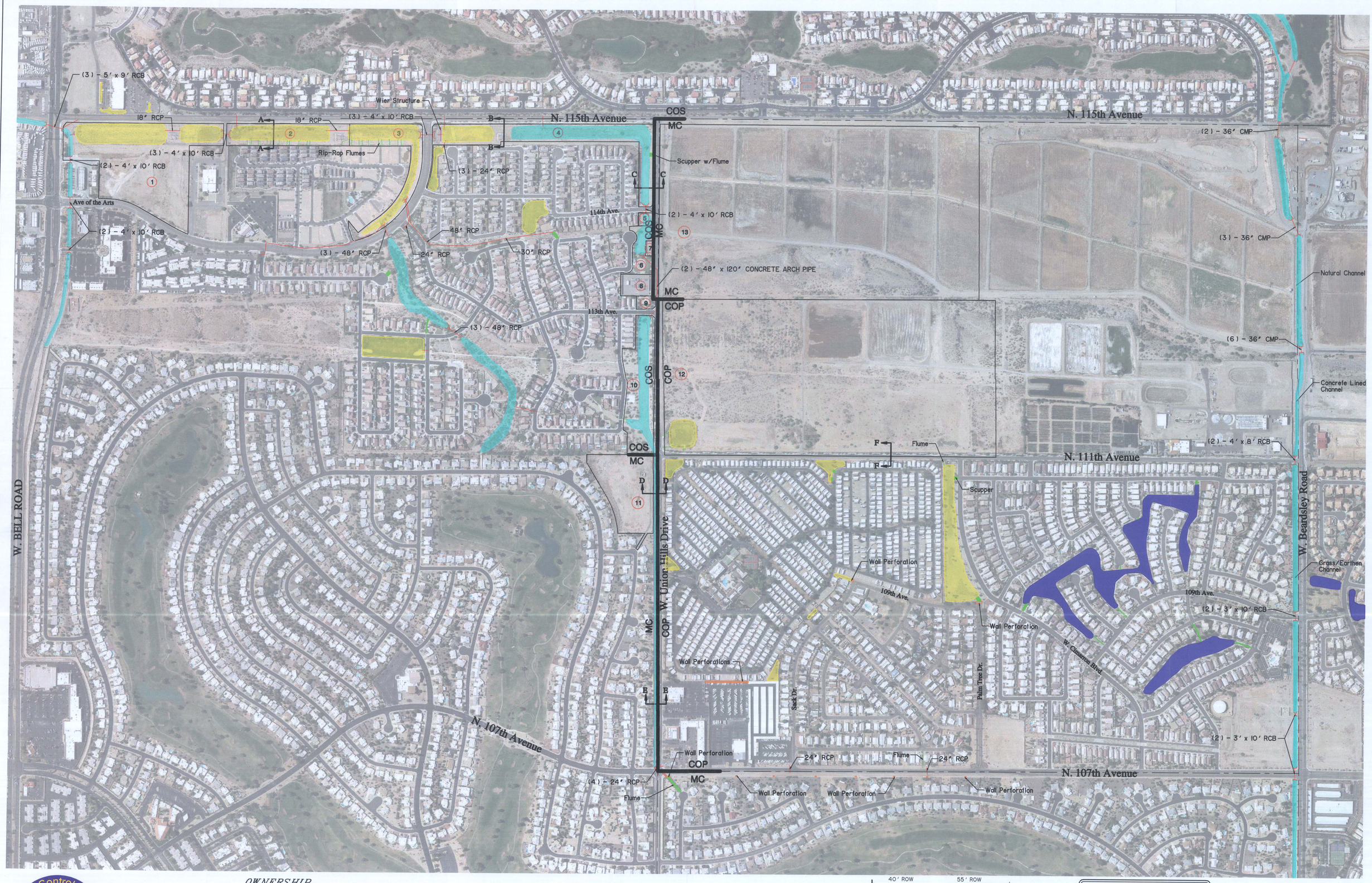
Please contact Warren Russell at wrussell@gmcivil.com should any revisions or corrections be requested.

Appendix N

CD Containing Digital Data

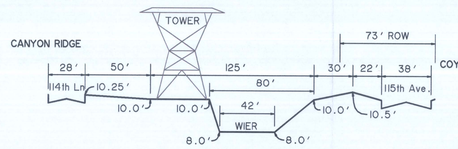
Plates

Plate 1: Existing Facilities Map
Plate 2: Watershed Boundary and HEC-1 Schematic for Baseline Model
Plate 3: HEC-1 Schematic for DCR Model
Plate 4: Existing Conditions 100 Year – 6 Hour DCR Discharge Map
Plate 5: 100 Year – 6 hour DCR Discharge and Recorded Flooding Comparison



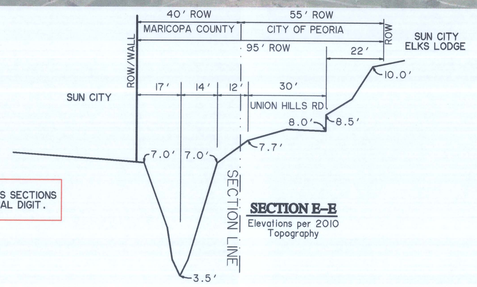
OWNERSHIP

1. Parcel: 200-13-016-X
   Owner: Stearns Bank National Association
2. Parcel: 200-13-373
   Owner: Canyon Ridge West Master Association
3. Parcel: 200-13-371
   Owner: Canyon Ridge West Master Association
4. Parcel: 200-13-171-B
   Owner: Canyon Ridge West Master Association
5. Parcel: 200-13-172
   Owner: Canyon Ridge West Master Association
6. Parcel: 200-36-390
   Owner: Canyon Ridge West Master Association
7. Parcel: 200-13-010-A
   Owner: Arizona-American Water Company
8. Parcel: 200-13-385
   Owner: Arizona Public Service Co
9. Parcel: 200-36-385
   Owner: Canyon Ridge West Master Association
10. Parcel: 200-36-391
    Owner: Canyon Ridge West Master Association
11. Parcel: 230-05-943
    Owner: Arizona-American Water Company
12. Parcel: 200-35-825
    Owner: City of Peoria
13. Parcel: 200-13-008-B
    Owner: Arizona-American Water Company



SECTION B–B
Elevations per 2000 MCFCD Topography

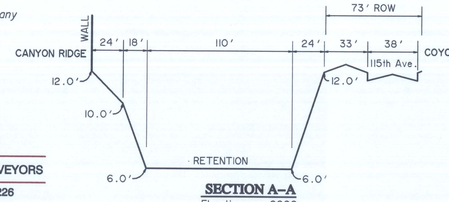
NOTE:
ELEVATIONS SHOWN ON CROSS SECTIONS HAVE BEEN REDUCTED TO FINAL DIGIT.
(e.g. 1496.0 = 6.0)



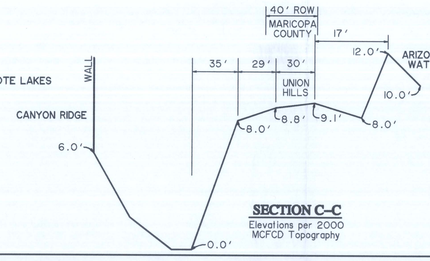
SECTION E–E
Elevations per 2010 Topography

LEGEND

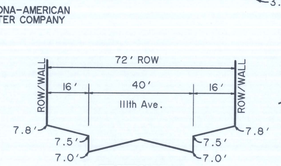
- LAKE/POND
- CHANNEL
- DETENTION/RETENTION
- SCUPPER/FLUME
- WALL PERFORATION
- STORM DRAIN PIPE/CULVERTS
- CROSS SECTION



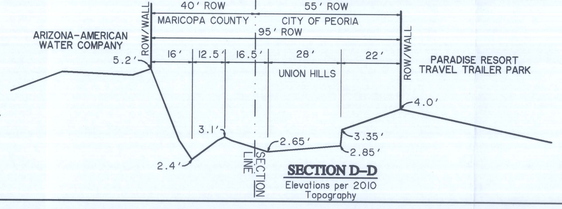
SECTION A–A
Elevations per 2000 MCFCD Topography



SECTION C–C
Elevations per 2000 MCFCD Topography



SECTION F–F
Elevations per 2010 Topography



SECTION D–D
Elevations per 2010 Topography

GRAPHIC SCALE 1"=300'
0 300 600 900

Flood Control District of Maricopa County

CITY OF PEORIA

SURPRISE ARIZONA

ENGINEER/PLANNER:
GOODWIN & MARSHALL, INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

PLATE 1
EXISTING CONDITIONS DRAINAGE FACILITIES MAP
FOR
107TH AVENUE AND UNION HILL DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
MAY, 2010

Lake Pleasant Parkway

Jomax Road

Happy Valley Road

Pinnacle Peak Road

107th Ave

Deer Valley Road

Rose Garden Lane

Beardsley Road

Union Hills Drive

115th Ave

Bell Road

CA09T

DA09U

N11NP

N11KP

X51

D11DAS

A09FI

CA09A

CA07D

RS30BW

CA08

CA07B

CA99Q

LEGEND

- UPDATED WATERSHED BOUNDARY BY G&M (2010)
- UPDATED WATERSHED SUB-AREA BOUNDARY BY G&M (2010)
- GLENDALE/PEORIA ADMPU NWU DRAINAGE BASIN BOUNDARY BY WOOD, PATEL & ASSOCIATES, INC. (2007)
- GLENDALE/PEORIA ADMPU DRAINAGE BASIN BOUNDARY BY ENTELLUS (2001)
- DIVERSION POINT WHERE FLOW IS MODELED TO EXIT WATERSHED
- S30 — DRAINAGE BASIN
- DS30A — DIVERSION POINT
- CA07B — CONCENTRATION POINT
- LA07B — STORAGE ROUTING
- RS30 — ROUTING REACH

N
W E
S

GRAPHIC SCALE 1"=1400'

0 1400 2800 3600

SURPRISE
ARIZONA

CITY OF PEORIA 1954

Flood Control District of Maricopa County

ENGINEER/PLANNER:

GOODWIN AND MARSHALL INC.

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PLATE 2
WATERSHED BOUNDARY and HEC-1 SCHEMATIC for BASELINE MODEL
FOR
107TH AVENUE AND UNION HILL DRIVE

CONTRACT: FCD 2009C036

CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA

MAY, 2010

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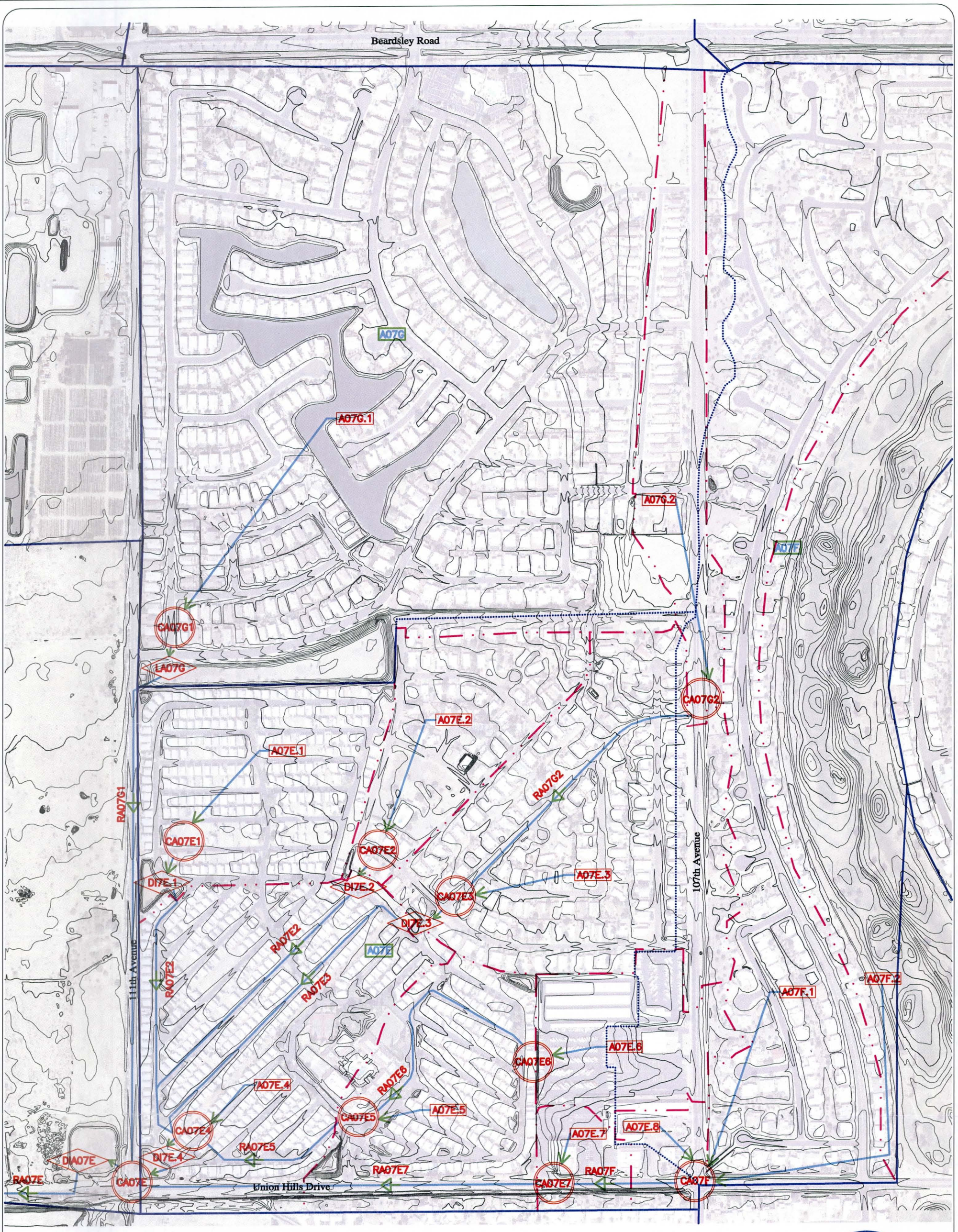

NOTE:
THE PURPOSE OF THIS EXHIBIT IS TO SHOW THE DCR BASINS. SEE BASELINE HEC-1 SCHEMATIC FOR REMAINDER OF MODEL.

LEGEND

- MODIFIED DCR BASE REVISED DRAINAGE BASIN BOUNDARY BY G&M (2010)
- MODIFIED DCR BASE PREVIOUS DRAINAGE BASIN BOUNDARY BY G&M (2010)
- GLENDALE/PEORIA ADMPU NWU DRAINAGE BASIN BOUNDARY BY WOOD, PATEL & ASSOCIATES, INC. (2007)
- A07G — MODIFIED DCR BASE DRAINAGE BASIN BY G&M (2010)
- A07G — GLENDALE/PEORIA ADMPU NWU DRAINAGE BASIN BY WOOD, PATEL & ASSOCIATES, INC. (2007)
- DS30A — MODIFIED DCR BASE DIVERSION POINT BY G&M (2010)
- CA07B — MODIFIED DCR BASE CONCENTRATION POINT BY G&M (2010)
- RA07E — MODIFIED DCR BASE ROUTING REACH BY G&M (2010)

N
W E
S

SURPRISE
ARIZONA

CITY OF PEORIA

ENGINEER/PLANNER:

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Metro (602) 218-7285

PLATE 3
HEC-1 SCHEMATIC FOR DCR MODEL
FOR
107TH AVENUE AND
UNION HILLS DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
MAY, 2010

W:\10388A\Hydr\Hydrology Base.pro Thu Jul 01 14:12:50 2010

Beardsley Road

A07G

A07G.1

A07G.2

A07F

425cfs 425 cfs

LA07G

23cfs

A07E.2

A07E.1

345 cfs

23 cfs

64cfs

46cfs

DI7E.1

DI7E.2

155cfs

A07E.3

107th Avenue

DI7E.3

42 cfs

A07E

111th Avenue

62 cfs

150 cfs

A07F.2

A07F.1

66cfs

A07E.6

63 cfs

A07E.4

144cfs

A07E.5

457cfs

140 cfs

A07E.7

A07E.8

DIA07E

DI7E.4

757cfs

156cfs

155cfs

156cfs

Union Hills Drive

N

W E

S

LEGEND

MODIFIED DCR BASE REVISED DRAINAGE BASIN BOUNDARY BY G&M (2010)

MODIFIED DCR BASE PREVIOUS DRAINAGE BASIN BOUNDARY BY G&M (2010)

GLENDALE/PEORIA ADMPU NWU DRAINAGE BASIN BOUNDARY BY WOOD, PATEL & ASSOCIATES, INC. (2007)

A07G — MODIFIED DCR BASE DRAINAGE BASIN BY G&M (2010)

A07G — GLENDALE/PEORIA ADMPU NWU DRAINAGE BASIN BY WOOD, PATEL & ASSOCIATES, INC. (2007)

DS30A — MODIFIED DCR BASE DIVERSION POINT BY G&M (2010)

450cfs — DCR MODEL CONCENTRATION POINT DISCHARGE BY G&M (2010)

450 cfs — DCR MODEL ROUTING REACH DISCHARGE BY G&M (2010)

SURPRISE
ARIZONA

CITY OF PEORIA

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Metro (602) 218-7285

PLATE 4
100–YR 6–HR DCR DISCHARGE MAP
FOR
107TH AVENUE AND UNION HILLS DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
MAY, 2010

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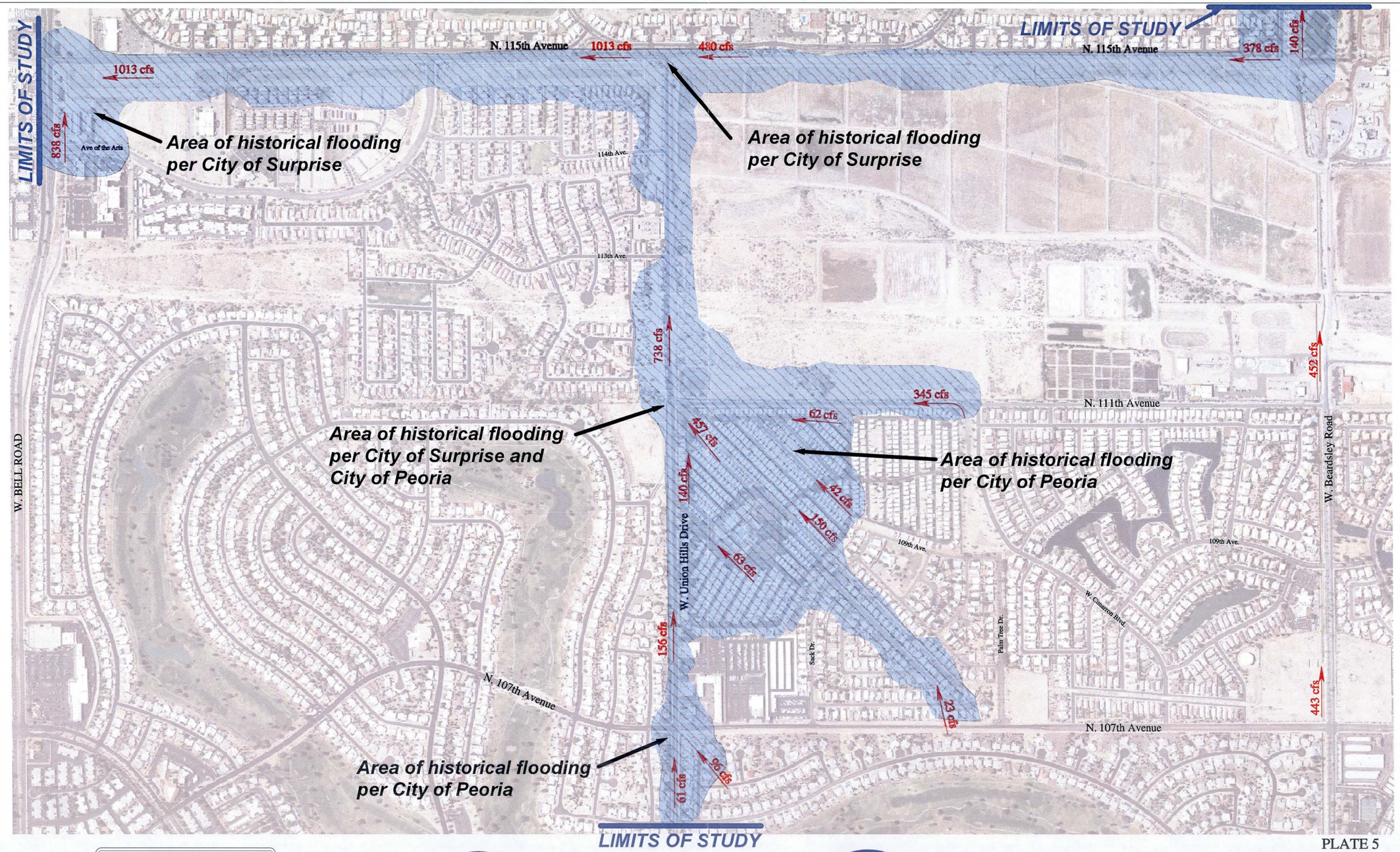

W
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N
E

LEGEND

500 cfs — EXISTING CONDITIONS 100-YR, 6-HR DCR DISCHARGE

AREAS OF POTENTIAL FLOODING

CITY OF PEORIA

SURPRISE
ARIZONA

Flood Control District of Maricopa County

ENGINEER/PLANNER:

GOODWIN AND MARSHALL INC.
CIVIL ENGINEERS ~ PLANNERS ~ SURVEYORS
6909 W. Ray Rd. #15, Chandler, AZ 85226
Metro (602) 218-7285

PLATE 5
100–YR 6–HR DCR DISCHARGE and
RECORDED FLOODING COMPARISON
FOR
107TH AVENUE AND
UNION HILL DRIVE
CONTRACT: FCD 2009C036
CITIES OF PEORIA AND SURPRISE
MARICOPA COUNTY, ARIZONA
JULY, 2010

W:\10388A\Prelim\Existing Facilities Exhibit.pro Wed Jun 30 19:36:32 2010